EUROPE'S BUSINESS NEWSPAPER

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Monday December 3 1990

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LATIN AMERICA
Bush visit seen as start of an era
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World News

Chance of war in Gulf is 50-50 says Saddam

President Saddam Hussein of Iraq said yesterday there was a 50-50 chance of war in the Gulf, but he gave no sign of willingness to compromise on demands that he remove his forces from Kuwait in order to avoid conflict.

In comments to French television on the US offer of a direct dialogue on the crisis, Mr Saddam said a peaceful resolution would depend very much on whether the US was genuine. Page 18.

Arms embargo lifted

The US has lifted a 14-year-old arms embargo against Chile, imposed in protest at the assassination in Washington of Orlando Letelier, an exiled Socialist who had been foreign and defence minister during the government of Salvador Allende, and his American secretary. Page 4

Tel Aviv killings

One Israeli was stabbed to death and three wounded when several Arabs attacked passengers on a bus in the Tel Aviv area. One of the Arabs was shot dead and two others wounded after a policeman stormed the bus. Page 4

Chad leader 'dead'

Libya's official news agency JANA reported yesterday that Chadian President Hissene Habre had been killed as he tried to flee victorious rebels. In a report from the Chadian capital N'Djamena, it quoted "informed sources" as saying reports that Habre arrived safely in neighbouring Cameroun were untrue.

Cape Town deaths

South African police said yesterday that the deputy mayor of a black shantytown was among 13 people killed at the weekend. Cape Town police said Alfred *Ngoboka, deputy mayor of the Khayelitsha shantytown*, was found stabbed to death on a roadside on Saturday.

Militia leaves Beirut

Lebanon's strongest Christian militia, the Lebanese Forces, prepared to leave Beirut despite reservations about a government plan to unite the capital.

Albanian election

Voters in Albania will elect a new parliament on February 10 next year from a choice of candidates for the first time in 45 years of Communist rule. The official news agency ATA, monitored in Vienna, said the polling date had been set by the presidium of the 250-member People's Assembly.

No Honecker arrest

Soviet troops guarding former East German Communist leader Erich Honecker refused to allow German police to arrest him on manslaughter charges on Sunday, pending orders from their commander.

30 die in bus crash

At least 30 people in a wedding party were killed and 20 injured yesterday when their bus crashed into a gully while negotiating a hilly road in north India.

Mozambique peace

THE Mozambican government and the rebel Renamo movement agreed at the weekend on the first stage of a ceasefire in the country's 15-year civil war. Page 3

Out for the count

A candidate who has insisted on counting ballots one by one has delayed the results of Egypt's parliamentary elections until today, officials said yesterday.

Adel Sedki, running against the party of his brother, Prime Minister Atef Sedki, refused to leave the polling station until he personally counted each ballot by hand.

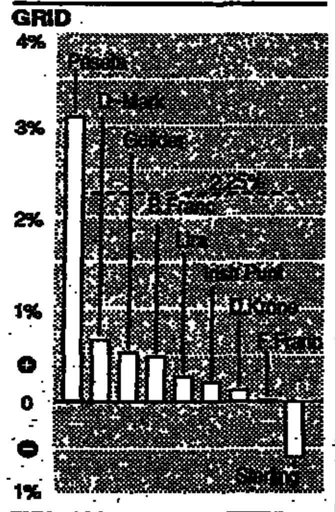
Business Summary

News Corp debt ratings downgraded in Australia

News Corporation's attempts to reschedule debts of \$6.5bn were dealt a severe blow by a caustic report from Australian Ratings, the credit-watch agency, which has downgraded News Corp's short-term debt by two points from B1 to C1. The move follows a similar downgrading last month by Moody's, the US agency. Page 19

EUROPEAN Monetary System: There was little overall change in the exchange rate mechanism last week. Sterling remained the weakest currency, not helped by speculation about a possible cut in UK bank base rates at a time when the Dutch and Belgian central banks raised their market intervention rates. The Bank of Italy successfully defended the lira by keeping short term rates high, and another rise in German rates is not ruled out now that yesterday's election is over.

EMS - November 30, 1990



The chart shows member currencies of exchange rate mechanism measured against the weakest currency in the EMS's narrow 2.25 per cent fluctuation band. In practice, currencies in the EMS narrow band cannot rise by more than 2.25 per cent from the weakest currency in that part of the system. Sterling and Spanish pesata operate within 6 per cent fluctuation bands. Currencies, Page 31

INTERNATIONAL Telegraph and Telephone Consultative Committee, international phone club, has started far-reaching reform of restrictive practices in the international telecommunications industry. Page 18

CREDIT AGRICOLE, France's big co-operative bank, has been torn by a row among its top management after the discovery of heavy losses on its international activities. Page 22

GENERAL Motors of the US, world's leading car maker, is to decide on its plan to build a 150,000 cars-a-year assembly plant in Eisenach, east Germany, involving a total investment of more than DM750m (\$507m). Page 2

BRITAIN'S government signalled to its EC partners meeting in Milan a shift in the tone, but none yet in the substance, of its opposition to a single Community currency. Page 18

AKER, Norway's biggest privately owned industrial company, has been approached by the Kvaerner group, Norway's third-biggest industrial company, to consider possible benefits of a merger. Page 22

ASEA Brown Boveri, electrical engineering group, is to build a \$220m 260MW power station in China's southern province of Guangdong. Page 6

ITOMAN, debt-laden Japanese trading and property development group, senior managing director, Mr Yoshikuni Kato, has been found dead at his home. Page 3

● CDU wins control of Berlin ● Endorsement for unity ● SPD support plummets

Kohl sweeps to clear victory

By David Marsh in Bonn

CHANCELLOR Helmut Kohl swept to clear victory in yesterday's united German elections, although his centre-right coalition may face strains after a swing to the liberal Free Democratic Party (FDP), junior partners in the Bonn government.

Mr Kohl's Christian Democrats (CDU), campaigning heavily on success in clinching unity, inflicted punishing defeat on the Social Democratic Party (SPD), which slumped to its lowest score in a national election for more than 30 years.

Yesterday's result, in the first poll for a democratic united German parliament since 1932, was a considerable triumph for Chancellor Kohl. In one of the biggest surprises of the election, the west German wing of the Greens ecology party appeared likely to be voted out of the Bundestag, although the party will continue to be represented by its smaller east German section.

Flanked by cheering election workers and outlined against a larger-than-life black-red-and-gold German flag at the CDU party headquarters last night, Mr Kohl declared that the government would "live up to its responsibilities".

Mr Oskar Lafontaine, the SPD's candidate for the chancellorship, fought an ill-fated battle against Mr Kohl's reunification policies. Last night the defeated challenger congratulated Mr Kohl and said the government had gained ground by "occupying the stage" during the last year of drama over German unity.

Mr Kohl said the score was a "great result". It marks a hat-trick of general election wins after Mr Kohl's successes in the West German elections of 1983 and 1987. The chancellor pointed out that his party achieved a practically identical vote of confidence in both east and west Germany.

Mr Gerhard Stoltenberg, the CDU defence minister, however, struck a sobering note by speaking of the "great challenges" facing the united parliament.

The scope of Mr Kohl's victory yesterday was boosted yesterday by the CDU's success in seizing control of the Berlin parliament in the first combined elections in the eastern and western parts of the city for 44 years. This means that five of the six states (Länder) in the geographical area of the former East Germany are now run by the Christian Democrats. A surprised Mr Eberhard Diepgen, head of the Berlin CDU, said he would begin negotiations immediately to form a new CDU-led Government in the city to replace Mr Walter Momper who was previously the SPD Mayor of west Berlin. Mr Momper indicated the SPD would be prepared to join a coalition under the CDU.

The CDU together with its sister party, the Bavarian Christian Social Union (CSU), roughly maintained its score compared with the West German general election in January 1987. Computer projections last night gave the CDU/CSU around 44.3 per cent of the vote, indentical to the 1987 performance, and at the upper limit of recent opinion poll forecasts.

The SPD fell to 33.3 per cent against 37.0 per cent in January 1987, well below the party's optimistic target of 40 per cent. This was the SPD's worst result since the West German general election of 1957. The Greens slumped to 5.0 per cent in east and west Germany against 8.3 per cent in West Germany four years ago.

The Free Democratic Party, which gained more than 10 per cent of the vote after 9.1 per cent in the West German election in 1987, is likely to bid for greater influence within the government in coalition talks starting this week.

Mr Hans-Dietrich Genscher, the FDP foreign minister, who played a major part in raising the party's score, said the FDP wanted to press home its aims in forthcoming talks with the CDU.

The FDP has assailed Mr Kohl in recent weeks above all because of his vagueness over fiscal policies next year, where the FDP is firmly ruling out any question of tax increases to finance German unity.

Mr Kohl said last night: "We want to continue the coalition" but said that coalition talks – which the government wants to complete by December 20 – would not take place under "time pressure."

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State of the Parties - United German Bundestag

	per cent of vote	seats
CDU/CSU	44.3 (44.3)	316 (305)
SPD	33.3 (37.0)	238 (226)
FDP	10.9 (9.1)	78 (57)
Greens/Alliance 90	5.0 (8.3)	8 (51)
Others	6.5 (1.4)	16 (24)

Brackets - previous results

Two Soviet soldiers in eastern Germany yesterday lean against a CDU election poster

Grey men take shine out of the Social Democrats

By David Goodhart in Bonn

JUDGING by the fashions on display at the main party headquarters in Bonn last night, Germany has decided it prefers to be ruled by the grey men in dark suits (of the Christian Democrats) to the radical chic (of the Social Democrats).

The only champions to take a thrashing was the English football club, Liverpool FC, whose defeat by league rivals Arsenal was beamed to the 25m German television viewers minutes before the first main exit poll was transmitted, giving the Christian Democrats (CDU) their expected victory.

First on to celebrate the victory was Mr Volker Ruhe, the CDU general-secretary, looking like Germany's new head boy, who, trying not appear too smug, said that the SPD "had crashed out of sight" and pointed to one of the few surprises of the evening – the CDU's strong showing in Berlin.

Soon after came the headmaster himself, Chancellor Helmut Kohl, who immediately indulged his favourite pastime, reading out lists of German towns. He thanked everyone who had voted for him from Rostock, to Flensburg, in Aachen, his home town of Ludwigshafen.

Mr Kohl will therefore, from next February, have ruled longer than his predecessor Mr Helmut Schmidt, a fact which is said to be of great importance to him.

It was not an evening for great quotes. The defence minister, Mr Gerhard Stoltenberg, surpassed many others with the startling observations that the result was "very significant". Mr Gregor Gysi, leader of east Germany's ex-Communists, the PDS, said that his party's 1.9 per cent was a vote "for quality over quantity".

At the SPD headquarters Mr Hans-Jochen Vogel, the party chairman, congratulated the candidate, Mr Oskar Lafontaine, for his tremendous efforts and his great appeal to youth – the comment received only cautious applause. A few young men sang the Internationale in the corner, an appropriately sad sounding anthem. The candidate himself appeared later looking composed: at least he knows that one of his chief rivals for the next election, Mr Walter Momper, the SPD mayor of Berlin, looks to be out of the running.

At the Free Democrats they were collecting money in little elephants for the Soviet Union and, intelligently, providing the journalists with food. The only significant party to forsake the neon-light politics of the party headquarters zone, between Bonn and Bad Godesberg, were the west German Greens, who in down-town Bonn bitterly faced the prospect of being kicked out of the Bundestag.

It was a victory for the establishment; but it was also a victory for Bonn and the old Federal Republic. The occasion was low-key, modest, slightly dull. There was scarcely a policeman in sight and untroubled access to all the main party headquarters.

Gorbachev struggles to protect reforms

By Quentin Peel in Moscow

DRASTIC STEPS were taken by Soviet President Mikhail Gorbachev at the weekend to head off a conservative onslaught on his entire reform process.

He replaced his liberal interior minister with a known conservative, and brought the most popular general in the Red Army into the heart of his government.

At the same time he called for the establishment of what will virtually be vigilante groups of workers, to prevent hoarding and speculation in food distribution.

He also stepped up his confrontation with rebellious nationalist republics, declaring unlawful all measures to prevent conscripts serving in the Soviet armed forces outside their home regions.

The moves came as conservative members of the national parliament served notice that they were planning to call a vote of no confidence in the Soviet leader at the Congress of People's Deputies – the supreme constitutional authority – in two weeks.

The removal of Mr Vadim Bakatin as interior minister, demanded by the 468-strong Soyuz (Union) group of deputies, is the biggest gesture yet by Mr Gorbachev to appease the conservatives.

Mr Bakatin will be replaced by Mr Boris Pugo, former leader of the Latvian Communist Party, and most recently chairman of the party's Central Control Commission, a key body maintaining party discipline.

More revealing still is the promotion of Gen Boris Gromov, the last Soviet military commander in Afghanistan, and the rising star of the military high command, as deputy interior minister. He will almost certainly now be responsible for control of nationalist unrest.

The interior ministry, responsible for law and order, has faced a rising chorus of criticism over its failure to curb a rising crime wave, to control ethnic disturbances and to tackle what is called "economic crime".

Mr Bakatin was seen as a popular and enlightened minister, and ironically was proposed by the Soyuz group last March as an alternative presidential candidate to Mr Gorbachev. But his star has rapidly

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BAe to announce £200m plan for enlarged regional airliner

PLANS to develop an enlarged version of the BAe 146 regional jetliner at a cost of about £200m (\$392m) will be announced by British Aerospace tomorrow.

The move coincides with intensified competition between commercial aircraft manufacturers in the fast-growing regional airline market.

With its planned 130-seat jet, BAe is attempting to build up a leadership position in the regional airliner sector at a time when several other European aerospace groups are planning rival aircraft for this market.

Deutsche Aerospace, the large aerospace subsidiary of the German Daimler-Benz car group, is considering development of a 130-seat regional jetliner in co-operation with Aerospatiale of France, Aeritalia of Italy and Casa of Spain.

Fokker, the Dutch aircraft manufacturing company, is also planning to develop a larger 130-seat version of its Fokker 100 regional jet. Boeing and McDonnell Douglas of the US are also competing in this market with the smaller Boeing 737-500 and the MD-87 respectively.

BAe has already won 300 orders for its four-engine BAe 146 100-seat aircraft since it was launched in 1977.

The aircraft, which is described as a "whisper jet", was originally designed to operate out of noise-restricted airports and from short runways.

However, BAe has sought to expand the overall market penetration of the BAe 146 family first by announcing this summer the development of an 80-seat version and now by deciding to develop a larger 130-seat version.

BAe is understood to be considering developing the new 130-seat version as a twin-engine rather than four-engine aircraft. This is likely to make it more competitive by reducing fuel costs.

Although demand for regional jetliners in the 70- to 130-seat class is forecast to total about 2,500 over the next 20 years, this is not expected to be large enough to accommodate the number of rivals vying for this market.

Deutsche Aerospace has campaigned for a rationalisation of the European regional jetliner manufacturing industries on the lines of the European Airbus consortium, which manufactures airliners of more than 150 seats.

But while BAe, Deutsche Aerospace, Aerospatiale and Casa are all partners in the Airbus programme, they remain competitors in the regional airliner market.

The German group has been anxious to lead a new commercial aircraft project and has been pressing other European companies to co-operate in the development of a 130-seat regional jet.

The cost, however, of developing a completely new airframe for a regional aircraft would amount to about \$2bn, compared with the \$400m cost of developing a stretched derivative of an exisiting airframe such as the BAe 146.

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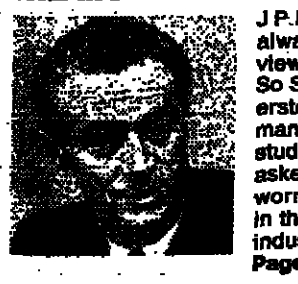
THE MONDAY INTERVIEW



J P Morgan has always taken a lofty view of world events. So Sir Dennis Weatherstone (left), its chairman, responds with studied calm when asked whether he is worried by turbulence in the world banking industry.
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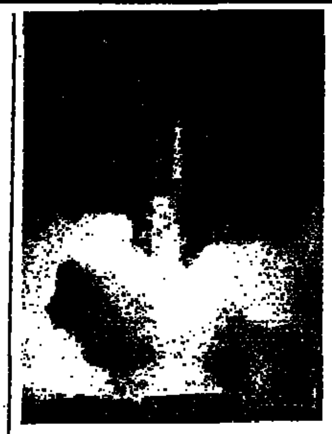
FT SURVEYS THIS WEEK



As Japan's space programme reaches for the sky, so does its advance in science.

■ TODAY:
Japanese Industry: Once derided as a nation of copy-cats, Japan is surging to the forefront of technological advance. *(Separate section).*

■ TUESDAY:
Netherlands: After 13 months of relative calm, the new Dutch centre-left coalition is facing harsh economic realities.

■ WEDNESDAY:
Thailand: The country is breathing on the tails of the "Asian Tigers" after three years of hectic growth. But inflation and other strains suggest it may be time for the brakes.

■ FRIDAY:
Retailing: While some retailers are looking forward to what is traditionally their busiest trading period, others are braced for a grim Christmas season

Canada cautious over Mexico-US free trade talks

By Peter Montagnon and William Dullforce in Brussels

A decision on whether Canada will participate in free-trade talks between Mexico and the US has been deferred until January. Ministers from the three countries decided here yesterday to hold two further sessions in December and January before reaching a decision that could presage the creation of a full North American free trade area.

A senior Canadian official said following yesterday's meeting that there were no insurmountable obstacles to Canadian participation.

The protracted nature of the consultations suggests there is some hesitation on the part of the other two players who have yet to define the scope of their proposed arrangement.

The US already has a free trade arrangement with its northern neighbour and Ottawa is concerned over the possible impact of a separate deal with Mexico.

Its anxieties focus on the possibility that this could undermine the so-called auto-pact which allows for free US-Canadian trade in cars under certain local content requirements designed to limit sales into the US of Asian cars assembled in Canada.

Canadian businessmen are also worried that cheap Mexican textiles and other goods maanifactured in its duty free zones bordering the US would seep into their home market.

Some trade officials regard the US- Mexican talks as potentially leading to the formation of an exclusive regional trading bloc.

This is particularly worrying to Latin American countries such as Chile which have adopted liberal trade policies in recent years.

However, Mr Arthur Dunkel, General Director of the General Agreement on Tariffs and Trade said yesterday that there was no automatic conflict between bilateral trade arrangements and the multilateral system.

GM expected to give go-ahead for east German car plant

GENERAL Motors of the US, the world's leading car maker, is expected to decide today to go ahead with its plan to build a 150,000 cars-a-year assembly plant in Eisenach, east Germany, writes Kevin Done.

The GM board, which meets today, is expected to approve the project, which could involve a total investment of more than DM750m (£259.5m).

The GM move will be the second step by a leading western car maker to build an assembly plant in east Germany, and follows Volkswagen's decision to invest up to DM5bn in new automotive operations in east Germany, including a DM3bn car plant at Mosel, near Zwickau, close to the former East German Trabant car plant.

GM's investment in Eisenach, the east German city where the Wartburg cars are produced, is expected to involve a car plant with body welding, paintshop and final assembly operations.

It is expected that most sheet metal stampings would be supplied from GM stamping plants in western Europe.

GM is considering assembling the Opel Kadett (Vauxhall Astra) in Eisenach and probably the Opel Corsa (Vauxhall Nova) small car, now produced in Spain.

Production at Eisenach is expected to begin in late 1992 or early 1993. It is intended that the plant would be a wholly-owned GM venture led by Opel, GM's German subsidiary, without a local partner.

In a pilot project GM began small-volume car assembly in Eisenach in October from SKD (semi-knocked down) kits supplied from its plants in western Europe.

It is now assembling the Opel Vectra (sold as the Vauxhall Cavalier in the UK) at Eisenach at a rate of 10,000 a year.

GM's expected decision to press ahead with the investment in east Germany is part of an ambitious expansion strategy in eastern Europe. It is already developing an engine plant and small-volume car assembly plant in Hungary, as well as an automotive components plant.

In Czechoslovakia it has reached preliminary agreement with the Slovak government to make transmissions and assemble cars.

Last month it signed a protocol with the Slovak government giving it exclusive rights to establish transmission manufacturing and vehicle assembly operations at the Bratislavské Automobilové Závody (BAZ) plant in Bratislava, pending the outcome of negotiations.

It said that it hoped to settle the deal by mid-December.

The company is planning to invest more than $150m (£76.5m) in the project, which it hopes will be wholly-owned rather than a joint venture.

It would make up to 250,000 car transmissions a year largely for export to its car assembly plants in western Europe.

In addition, GM plans to assemble 20-25,000 cars a year in Bratislava, most probably its Kadett/Astra and Vectra/Cavalier models for sale in the Czechoslovak market.

Production could begin in late 1992.

Mazowiecki and Church back Walesa

By Christopher Bobinski in Warsaw and Bernard Simon in Toronto

POLAND'S Prime Minister, Mr Tadeusz Mazowiecki, and the country's influential Catholic Church yesterday appealed to the electorate to unite behind Mr Lech Walesa, the Solidarity leader, who is bidding to become president next Sunday.

But Mr Walesa's rival, Mr Stanislaw Tyminski, the émigré businessman, continues to attract support despite attempts by his opponents to link him to the former communist regime and its security services.

In the latest opinion poll published by Polish radio and television, Mr Walesa is 28 points ahead of Mr Tyminski's 30 per cent.

Mr Mazowiecki, who was beaten into third place in last Sunday's first round, said success for Mr Tyminski could "endanger Poland and everything we have struggled for".

Mr Walesa, meanwhile, continues to question Mr Tyminski's past. "I'm not surprised that the staff of the former nomenklatura [old-boy network] and former secret police are trying to save the remnants of what was once theirs," he said in a television debate on Saturday night.

Mr Walesa was referring to those former security policemen who are working for Mr Tyminski. One of his aides at the state electoral commission is Mr Jerzy Gralak, once his scoutmaster and until recently a police colonel in charge of internal security for Ochota, a district in Warsaw.

"I did not know about these details but Mr Gralak is competent and he has now left his [Communist] party," said Mr Tyminski.

Officials at the Ministry of the Interior have shown that in 1969, Poland's counter-intelligence overruled a decision by passport officials not to grant Mr Tyminski permission to travel to Sweden. His passport was later extended by the Polish embassy in Stockholm even though he had refused to return to Poland. Mr Tyminski denies all knowledge of this, saying he has "too little time now" to take individuals to court on libel actions.

Mr Ronald Fox, a Canadian businessman whose wife is a friend of Mr Tyminski's wife, said he met the former Polish consul-general in Toronto at the Tyminski's home. Mr Fox has described Mr Tyminski as a "hard-core communist".

Walesa, left, and Tyminski shake hands in a Warsaw TV studio at the weekend

Mr Tyminski remains undaunted by these allegations. Indeed, the lack of any evidence of nefarious connections has given him the aura of someone who is being hounded by Solidarity simply because of his electoral success. It is also winning him more support.

Support comes from those disillusioned with the continuing recession and eager to support a candidate who appears to be independent of the ruling establishment; from the young, because they see in Solidarity a movement which belongs to their parents; and from those who believe Poland will be bought out by western capitalists.

The country could become the "object of economic aggression", said Mr Tyminski. To avoid this, he suggests that Poland refuses foreign aid, stands on its own two feet by embarking on an export offensive to western markets and lowers taxes for small enterprises.

Progress made on Eurofed

Draft statutes for European bank

By David Buchan in Lesmo, near Milan

EC central bank governors yesterday presented draft statutes for the planned Eurofed central bank that leave relatively few gaps to be filled in by the forthcoming conference on monetary union.

A confidential report to Community finance ministers meeting here says that the 12 governors have not been able to settle precise responsibility for exchange rate policy and the operational powers of the Eurofed's six-strong executive board. The governors also said they had deliberately not tried "to detail operational aspects which may be outdated by the time [the system] is established".

One example of this concerns the issue of prudential supervision. Those national central banks, such as the Bank of England but not the Bundesbank, which are responsible for checking that commercial banks are soundly run, will be able to continue this role. But the governors say that in article 25 of their statutes, they "offer the possibility of designating the European Central Bank as a competent supervisory authority" in the future.

However, the governors clearly set out the final institutional architecture for the Eurofed to manage a single currency, even though Mr Robin Leigh-Pemberton, the Bank of England governor, has put on record his political authorities' opposition to a single "imposed" currency.

Thus, the governors say they are "firmly of the view that indivisibility of monetary policy, independence and democratic accountability, federalism and subsidiarity, denial of monetary financing to the public sector, freedom to conduct foreign exchange market operations in the framework of the Community's exchange rate regime, availability of the appropriate policy instruments and financial autonomy are indispensable cornerstones" on which the Eurofed must be built.

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Fibre-optic link across Soviet Union downgraded

AN ambitious scheme to create a single fibre-optic link across the Soviet Union has been technologically downgraded to satisfy US and British fears that it posed a security threat, writes William Dawkins in Paris.

The project, to be run as a joint venture between the Soviet Ministry of Telecommunications and a consortium of western telecommunications operators, has been divided into sections linked by much lower-capacity cables than originally proposed.

Washington objected last June to the original plan for a single high-capacity cable, on the grounds that it could be used by the military and would make it harder for western security services to monitor calls. The new project has satisfied their worries, said officials at CoCom, the organisation responsible for stopping exports of militarily useful western technology to the Soviet Union and strategically sensitive eastern European countries.

Alcatel, the French telecommunications equipment supplier, has won the contract for the first FFr100m (£10.2m) section of the revised project, a 250km link between the Siberian cities of Irkutsk and Ulan-Ude, 50km of which will cross Lake Baykal, the world's largest freshwater lake.

The cable will have a 34-megabit per second capacity, well below the 45 Mbit/s above which optical fibre links have to be vetted by CoCom.

Alcatel will also be bidding for other sections of the 10,000km line, to cross the Soviet Union from the west to the Pacific coast, though company officials do not know when these will be allocated.

The full project will complete a round-the-world network of fibre-optical cables.

Pope names Casaroli's successor as secretary of state

THE Vatican marked the passing of the Cold War at the weekend when Pope John Paul II named Bishop Angelo Sodano to succeed Cardinal Agostino Casaroli as his secretary of state, writes John Wyles in Rome.

During his 11 years as "the Vatican's prime minister", Cardinal Casaroli, aged 76, has seen more success than he might have expected in the task he was first given 27 years ago by Pope John XXIII – to rebuild the Church's relations with eastern Europe.

The pope spoke of his sense of loss at the resignation of Cardinal Casaroli, which has been in his hands since the cardinal reached the Vatican's retirement age more than a year ago.

Monsignor Sodano, who will be made a cardinal in the next two months, represents continuity, both because he is Casaroli-trained and because he is an Italian. Aged 63, he has spent nearly 30 years in the Vatican's diplomatic service and for the last two years was under-secretary for relations with states, in effect the pope's foreign minister.

Iraq talks pledge raises false hopes

By Peter Riddell, US Editor, in Washington

THE financial markets may have misread President George Bush's initiative to open direct contacts with the Iraqi leadership. If the rise in share prices and sharp fall in oil prices on Friday reflected hopes of a negotiated settlement and peace, they could be sadly misplaced.

As Mr Bush emphasised on that day – and senior US officials have underlined since – the proposed meetings in Washington and Baghdad are not negotiating sessions to find some sort of deal. The main aim is to convey directly to President Saddam Hussein that the US is serious about the option of military action if Iraq does not withdraw from Kuwait, restore the legitimate government and free all hostages.

Mr James Baker, US secretary of state, said yesterday that there could be no negotiating downwards from the UN resolutions.

US officials are sceptical about whether the diplomatic exchanges will produce a shift in Baghdad's policy, a view shared by Soviet leaders. But Washington believes the meetings are necessary to keep the international coalition together and for domestic reasons.

President Bush wants to demonstrate to the US people that he is willing to exhaust diplomatic options – "to go the extra mile for peace" – before deciding on military action. His initiative has been welcomed by congressional leaders and, for the moment, has reduced some of the domestic criticism which built up during last week's hearings on Capitol Hill. But this only defers, rather than resolves, the issue of how, and when, to seek congressional approval for any military action.

The sole "wiggle room" in Mr Bush's proposal is that, within the context of fulfilment of the UN resolutions, the US is prepared to "discuss all aspects of the Gulf crisis".

Mr Baker said yesterday, as the US has before, that after Iraqi withdrawal from Kuwait there could be discussions between Iraq and Kuwait about the differences between them. He added that he would reject any link which Iraq was seeking to introduce between the Gulf crisis and the Palestinian issue.

Moreover, Mr Baker said there was the "assurance that if Saddam Hussein complied with the resolutions his reward for that would not be a military attack by the US". But, after the end of the crisis, the US would still seek to address the issues of Iraq's "possession of weapons of mass destruction and its disproportionate military power".

However, the prospect of these meetings fills Mr Henry Kissinger, a former secretary of state, with "foreboding". He believes it will be difficult both to distinguish between discussions and negotiations and to hold the international coalition together, since European and other countries may be encouraged to start their own negotiations with Iraq.

AP adds from Riyadh: Mr James Watkins, US energy secretary, held talks yesterday with Mr Hisham Nazer, Saudi Arabia's oil minister. Sources said they were discussing an arrangement under which the US would draw down their strategic oil reserves to keep oil prices lower if Gulf production was halted by war.

Tank crews with the British 7th armoured brigade relax after a simulated battle in Saudi Arabia

Ayodhya temple rivals in peace talks

By K.K. Sharma in New Delhi

HINDU fundamentalists and Moslem leaders met for the first time at the weekend over plans to build a temple at Ayodhya, northern India, site of an ancient mosque.

Police have killed more than 20 Hindu militants following attempts to start construction work on the temple, which is opposed by the government.

The weekend meeting is considered a breakthrough in efforts to settle the issue peacefully and could ease pressure on the government, under Prime Minister Chandra Shekhar, to solve the dispute.

No agreement was reached but Hindu and Moslem leaders are to meet again tomorrow.

Former prime minister Rajiv Gandhi, whose Congress party now backs the minority government, has suggested to Mr Chandra Shekhar that a commission of five Supreme Court judges be formed immediately to determine whether a temple existed at the site of the Babri mosque in Ayodhya.

Hindus are determined to build the temple, where they believe the god Ram was born. If accepted, Mr Gandhi's suggestion could defuse tensions.

Mozambique secures Renamo peace pledge

By Our Foreign Staff

THE Mozambican government and the rebel Renamo movement agreed at the weekend on the first stage of a ceasefire in the country's 15-year civil war.

The agreement, signed after talks in Rome, came a day after the government introduced a multi-party, mixed-economy constitution. Elections are expected to take place in 1991, provided a full ceasefire can be implemented and differences settled over how the country's first multi-party poll will be organised.

"I hope that this will, in a short time, be followed by a ceasefire agreement to end the war," said Mr Armando Guebuza, Mozambique's transport minister, after shaking the hand of Mr Raul Domingues, Renamo's "foreign minister".

On Thursday last week President Joaquim Chissano offered to merge government forces with Renamo once the war had ended.

Under the agreement all Zimbabwean troops in Mozambique, who have been deployed on the government side, will be confined to two four-mile-wide transport "corridors" running from Zimbabwe's border to the Mozambique ports of Beira and Maputo.

Many of the estimated 10,000 Zimbabwean soldiers are already protecting the routes, but others have played an offensive role in a war that has cost hundreds of thousands of lives.

One million refugees have sought sanctuary, mainly in Malawi. A further 3.4m people – out of a population of 15m – have been displaced from their homes inside Mozambique.

Under the agreement, which will be monitored by an international commission, the Zimbabwean troops must be regrouped in the corridors by December 15.

Renamo said it would not attack the Zimbabwean forces in the corridors. In return the troops must abstain from any offensive military operations while regrouping.

The two sides have also agreed to give the Geneva-based International Committee of the Red Cross (ICRC) the right to go anywhere in Mozambique to help victims of the conflict.

Top executive at troubled Itoman group found dead at home

THE troubles of Itoman, the debt-laden Japanese trading and property development group, turned to tragedy over the weekend when a top executive was found dead at his home, Stefan Wagstyl writes from Tokyo.

Police said Mr Yoshikuni Kato, 61, apparently committed suicide by drowning in his bath. Notes from Mr Kato addressed to his wife and eldest daughter were found at the house, in a suburb of Nagoya, in central Japan.

Mr Kato's death comes amid attempts by Itoman to restructure its finances, including debts totalling Y1,300bn (£5.1bn) with the support of Sumitomo Bank, a leading commercial bank and Itoman's largest creditor.

Mr Ichiro Isoda, former chairman of Sumitomo, has resigned over his role in the affair, as have a number of other officials at Sumitomo and Itoman.

Mr Kato was a senior managing director of Itoman and manager of its branch in Nagoya, where much of the company's recent expansion in debt-financed property investment has been concentrated.

Mr Kato, a former employee of Sumitomo Bank who joined Itoman in 1982, played a key part in managing these investments and in maintaining links with Sumitomo.

He was also responsible this year for helping recruit Mr Suemitsu Ito, a businessman with extensive links with finance and property companies.

Mr Ito became a director and oversaw a rapid expansion of Itoman's already substantial debts. He resigned a month ago after officials from Sumitomo Bank started examining the full extent of the company's assets and liabilities.

The relationship between Sumitomo Bank and Itoman has been close since Sumitomo rescued the trading company from a previous financial crisis in the 1970s.

Chad government falls as rebel forces seize capital

By Our Foreign Staff

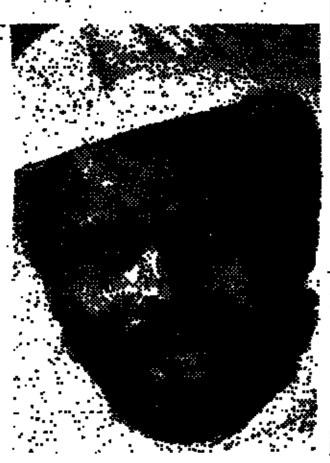
THE central African government of Chad fell yesterday when the rebel leader Idriss Deby and his troops took control of Ndjamena, the capital, two days after capturing the strategic northern town of Abeche.

President Hissene Habre fled the capital on Friday and is thought to have taken refuge in neighbouring Cameroon.

The Chadian ambassador to Paris denied reports by the official Libyan news agency Jana which quoted unidentified sources as saying Mr Habre and aides had been killed.

Mr Deby, 37, is a professional soldier trained in France, the former colonial power. He helped President Habre oust former President Goukouni Oueddei from power in 1982 and then served as defence minister until President Habre accused him of plotting a coup in April 1989.

Mr Deby, leader of the Popular Salvation Movement, began his military campaign against President Habre on November 10, initially operating from bases in Sudan. President Habre accused Libya of taking part in the fighting, but French diplomats described it as a domestic conflict.



Hissene Habre: fled capital on Friday

Jana welcomed Mr Deby's victory, saying Mr Habre had been "an obstacle in the way of national reconciliation and an obstacle to good neighbourliness".

Last week France reinforced its 1,000-strong military presence in Chad, but said it would not take sides in the fighting.

Mr Deby has pledged to respect democracy and human rights and to establish a multi-party system.

Latin American ministers meet to prepare strategy

By Leslie Crawford in Santiago

FINANCE and economy ministers of eight Latin American countries held a surprise meeting at a Chilean seaside villa over the weekend to map out a common strategy ahead of US President George Bush's visit to the region this week.

Many of them are frustrated at the lack of progress in Mr Bush's Enterprise for the Americas Initiative – an ambitious plan launched in June to create a free trade zone from Alaska to Tierra del Fuego.

Mr Alejandro Foxley, the Chilean finance minister, said recently: "We are going to hold the US to its word and point out the contradiction of preaching free trade against the actions of an increasingly protectionist US Congress."

Mr Foxley said he had invited his Latin American colleagues to discuss, informally and in private, issues of interest to the region. In addition to the US president's tour, they reviewed the impending Gatt talks, the Gulf crisis and the prospects for greater economic integration among Latin American countries.

The ministers, from Mexico, Colombia, Peru, Ecuador, Bolivia, Chile, Brazil and Uruguay, also called on the European Community to start negotiations on a free-trade accord with Latin America.

Mr Pedro Aspe, the Mexican finance minister, said the prospects for joint Latin American initiatives were better than ever before. "For the first time many of our countries are pursuing the same economic goals, with the same policies. There is great scope for co-ordinating and harmonising our efforts."

Mr Foxley said he hoped these meetings would be held regularly. As president of the IMF and World Bank's development committee, he will be acting as a spokesman for Latin America's concerns.

News of the gathering, held near the coastal resort of Cachagua, 150km north of Santiago, was kept secret until the last minute because of growing security concerns in Chile. Last month, a Canadian citizen was killed by a bomb at a baseball match in Santiago. Two other Canadians, two Americans and a Chilean were also injured. Earlier in November, a bomb in a restaurant in the coastal resort of Viña del Mar hurt three US marines.

Until these attacks, foreigners had not been the target of terrorist actions in Chile.

Bush visit seen as beginning of a new era

Robert Graham and Peter Riddell look ahead to the president's five-nation Latin American tour

PRESIDENT George Bush this morning arrives in Brazil at the start of a five-nation, week-long trip to Latin America to express support for the recent consolidation of democracy and internal reform programmes, while pushing his proposals for closer economic ties.

In particular, Mr Bush will seek to take forward his Enterprise for the Americas initiative launched on June 28, which provides for talks leading to free trade agreements with Latin American countries, relief on official debts owed to the US and a programme with the Inter-American Development Bank (IADB) to encourage investment and privatisation.

US officials point to the talks already under way on lowering trade barriers and on developing the IADB's new lending programme to aid investment, especially by the private sector. However, legislation needed to authorise official debt relief, assistance for environmental projects and a US contribution to the multilateral investment fund run by the IADB failed to be approved by Congress, except for one small provision covering food loans, when it adjourned in late October and Mr Bush will promise to reintroduce the measure early next year.

Latin American leaders expect few concrete results from Mr Bush's visits to Brazil, Uruguay, Argentina, Chile and Venezuela, in view of Washington's preoccupation with the Gulf crisis and the uncertainties about the outcome of final talks on trade liberalisation in the Uruguay Round.

Nevertheless, leaders in the region are convinced that Mr Bush's presence symbolises the beginning of a new era and they have welcomed his initiative as providing a useful framework to the build a new economic partnership. They believe mutual antagonisms over security interests have faded away with the end of the Cold War, while co-operation has been enhanced with the region-wide consensus on market-oriented economic policies.

Mr Bush will have to allay concerns that the US is mainly interested in deepening ties with its immediate Latin neighbour, Mexico. He will also be challenged about the smallness of the proposed \$300m (£153m) new regional investment fund and continuing problems over the region's overhang of debt.

"Bush, out of the Gulf, out of Argentina," reads a slogan on a Buenos Aires wall ahead of the visit

A week ago Mr Bush met Mexican President Carlos Salinas de Gortari in Monterrey; they discussed the timetable for establishing a North American Free Trade Agreement, also involving Canada. This is being presented as the model for the rest of the region. By visiting the other leading countries now, US officials hopes Mr Bush will be able to demonstrate a sense of balance.

Mr David Mulford, Treasury under-secretary for international affairs, admitted on Friday that the free trade agreement with Mexico was the US's first priority and would be given that place in the negotiating process. However, the US has signed bilateral framework agreements in the past few months with Bolivia, Colombia, Ecuador, Chile and Honduras and is discussing a multilateral framework agreement with Argentina, Brazil, Uruguay and Paraguay, which have come together with plans for regional economic integration by 1994 to reduce sectoral trade barriers.

Chile is already pressing ahead with proposals for a free trade agreement with the US and is demanding greater reciprocity from Washington to match its own lower tariffs. The US has just announced proposals to remove some of the remaining trade restrictions imposed because of abuses of workers' rights and other features of the previous military dictatorship.

Venezuela is anxious to take advantage of its role as a strategic supplier of crude and refined products to the US to wring commercial advantage from non-traditional exports.

Both Argentina and Brazil are also expected to raise with Mr Bush the issue of controls on the transfer of technology and its use in exports to third countries. Argentina has come under scrutiny because of its earlier involvement with Egypt and Iraq on the Condor ballistic missile, while Brazil claims it is being unfairly penalised by the US for the export by previous regimes of sensitive military equipment.

US lifts Chile arms embargo

By Leslie Crawford

THE US has lifted a 14-year-old arms embargo against Chile, Mr Enrique Silva Cimma, the Chilean foreign minister, said at the weekend.

Washington banned the sale of military equipment to Chile in 1976 in protest at the assassination in Washington of Mr Orlando Letelier, an exiled Socialist who had been foreign and defence minister during the government of Salvador Allende, and his American secretary, Mrs Ronnie Moffit.

The killings were planned by DINA, Gen Augusto Pinochet's secret police, in the only known case of state-sponsored terrorism on US soil.

The lifting of the arms embargo, nine months after the restoration of democracy in Chile, removes the thorniest issue in US-Chilean relations ahead of President George Bush's arrival in Santiago on Thursday.

One of the conditions of the Kennedy Amendment, named after Senator Edward Kennedy, who led the campaign for an arms embargo against Gen Pinochet's dictatorship, is that the Chilean government take serious steps to bring the culprits of the Letelier-Moffit assassinations to trial.

The case has been blocked for years in Chile's military courts. But legal reforms being studied could hand the case to a civilian court.

Retired general Manuel Contreras, former chief of DINA and once the second most powerful man in Chile, has been indicted in the US as the "intellectual author" of the crime. The Chilean Supreme Court turned down a US request for his extradition.

The US has handed President Patricio Aylwin's government several volumes of evidence pertaining to the case, but it remains to be seen whether the civilian courts can overcome Chile's mighty military establishment and put Mr Contreras in the dock.

NEWS IN BRIEF

Israeli and Arab die in Tel Aviv bus attack

ONE Israeli was stabbed to death and three were wounded yesterday when several Arabs attacked passengers on a bus in the Tel Aviv area, writes Judy Maltz in Jerusalem.

One of the Arabs was shot dead and two others were wounded, after a border policeman stormed the bus. The three attackers, residents of a West Bank village, made their way to the back of the bus, pulled knives out of their bags, cried "Alahu Akhbar" (God is great), and stabbed passengers on the bus.

● Israeli airports, schools and government offices were shut down yesterday, as 500,000 public sector workers went on strike called by the powerful Histadrut labour federation, in protest at government plans to change the minimum wage law and to tax pension funds.

Warrant for Honecker's arrest

East Germany's ailing 78-year-old former leader, Mr Erich Honecker, faces arrest on charges of manslaughter in the fatal shooting by border troops of 190 East Germans who attempted to escape across the Berlin Wall and the former border between East and West Germany between 1961 and last year, Leslie Colitt reports from Berlin. A warrant for Mr Honecker's arrest was issued by officials in west Berlin, but an attempt to serve the warrant on Saturday was initially rejected by the Soviet military authorities.

Axe poised over Gillette blade plant

The Gillette Company has warned that it may close the world's biggest razor blade plant in Boston if the city goes ahead with a plan to ban ozone-depleting chemicals, Alan Friedman writes from New York.

Bangladesh battles

Up to 70 people may have been killed and 500 injured in five days of sporadic battles between Bangladesh security forces and demonstrators protesting against a state of emergency, witnesses said yesterday, Reuter reports from Dhaka.

BCCI sentences

A court in Tampa, Florida, has imposed jail sentences from three to 12 years for drug money laundering offences on five former executives of the Bank of Credit and Commerce International, writes Richard Donkin.

Venezuelan loan

The World Bank has approved a \$100m (£51m) loan to help the estimated 22 per cent of the Venezuelan population now classified as living in conditions of "extreme poverty", writes Joseph Mann in Caracas.

Burmese borrowing

The Burmese government has promulgated a law aimed at stimulating the private sector which would allow industrialists to borrow from the government for fixed or working capital, Chit Tun writes from Rangoon.

At noon on December 1, 1990, one hundred metres below the surface of the English Channel, history was made with the Channel Tunnel breakthrough.

A physical link between Britain and the continent of Europe was re-established for the first time in 12,000 years.

A handshake between two construction workers – one French, one British – put the seal on the historic moment.

The accuracy that has been achieved on the project is staggering – the two sections of the 50 kilometre tunnel met within millimetres.

This privately financed project is a fitting testimony to the civil engineering skills, initiative and vision of the consortium of British and French contractors who met and overcame the challenge, who turned the dream into a reality – and did so ahead of schedule.

Balfour Beatty | COSTAIN | Tarmac CONSTRUCTION | TAYLOR WOODROW | WIMPEY

STRENGTH *through* CO-OPERATION

Bush warned on Congress stand over Gatt talks

By Peter Montagnon and William Dullforce in Brussels

THE Bush administration will lose its authority to negotiate in the General Agreement on Tariffs and Trade (Gatt) if there is no quick result in the Uruguay Round of multilateral trade negotiations, a leading senator said yesterday.

Mr Max Baucus, chairman of the Senate sub-committee on trade, said in Brussels that the so-called fast-track negotiating authority, which expires on March 1, will not be renewed.

"I can see no circumstances under which the US Congress is going to agree to extend the fast-track," he said, as both US politicians and private-sector executives stepped up their pressure on other countries to make concessions at the final Uruguay Round meeting here.

Mr Baucus warned that Congress would only ratify a Uruguay Round agreement if it was a substantial one that brought "major benefits" to US industries, which would override the opposition to the Gatt in many parts of the country.

Mr Don Pease, of the House ways and means committee, added: "In my area of Ohio, I find no constituency for the Gatt, no constituency whatsoever."

A final agreement had to keep intact the strong safeguards in US law against dumping and subsidisation by its trading partners. "We think that's the key to keeping a broad support for the ratification process in the manufacturing sector of our economy."

Mr Sam Gibbons, chairman of the House ways and means sub-committee on trade said that Congress also wanted the US to retain its powers of unilateral retaliation against unfair trade.

Section 301 of the Act which covers this right "is a trade liberalising procedure. It is one that we use to open markets, not just for the US but for all the world".

Asked what concessions the US could make to ensure a strong agreement, business executives said they preferred to concentrate on an agreement that opened foreign markets.

John Reed: concerned by lack of progress

Mr John Reed, chairman of Citicorp, said he was concerned at the lack of progress in talks to free trade in services.

The US needed tangible progress towards substantive liberalisation leading to new market openings and market access, he said.

US farmers also needed market openings and were "frankly very disappointed" by the European Community's proposal to cut supports by 30 per cent, said Mr Wayne Boutwell, president of the National Council of Farmer Co-operatives.

"If that's where we're going to come out, we need to just pack our bags and go home," he added.

ABB to build power station in China

By Angus Foster in Hong Kong

ASEA Brown Boveri, the electrical engineering group, is to build a $220m (£112.2m) 260MW power station in China's southern province of Guangdong, across the Hong Kong border.

ABB has set up a joint venture company with Chinese authorities in Dongguan city, about 50 miles north of Hong Kong. The new company will build, own and operate the residual oil-fired power station for 15 years with both partners having equal control.

The plant will then be transferred to Dongguan, which has guaranteed to buy the power, paying in US dollars.

The project will be financed by a consortium of banks led by CCIC Finance, a merchant banking arm of the Bank of China Group, and the Hong Kong branch of Algemene Bank Nederland NV. Financing for the plant is expected to be arranged by the second quarter of next year.

The agreement is further evidence that banks are starting to reassess projects in China, many of which were put on hold in the wake of last year's crackdown in Peking.

Japanese and Hong Kong banks recently committed themselves to a big road development in southern China for a Hong Kong company. Last week an Italian bank, Credit Italiano, signed the first export credit facility with China since the EC removed sanctions imposed last year.

Boeing to update RAF helicopters

BOEING of the US has been awarded a contract worth about $250m (£130m) to update the RAF's fleet of 33 Chinook heavy-lift helicopters, writes David White.

The deal, signed after a year's negotiation, pledges Boeing to a further programme of compensatory contracts in the UK, in addition to the $1.5bn it is due to spend with British companies to offset the purchase of Awacs aircraft. The update work, including new hydraulics and avionics, will be carried out between 1991 and 1994.

Boeing said it had agreed to provide offset contracts worth about $100m for British companies, including Lucas Aerospace and Westland, as part of the Chinook deal.

Satellite groups' merger clouds HDTV picture

BSB's link with Sky Television has slowed Europe's race for high-definition TV, writes Michael Skapinker

SONY of Japan will begin selling this month the first high-definition television (HDTV) sets to be made available to consumers.

As the set is priced at a staggering Y2.3m (£9,100) and weighs a hefty 130kg, Sony does not expect many consumers to buy it, particularly as they will have to pay a further Y1.8m for a decoder capable of receiving high-definition broadcasts.

The sooner Japanese electronics companies get HDTV sets into the shops, however, the sooner they can begin boosting output, driving down the price and launching their familiar assault on the European and US markets. Sony's sets will be joined in Japanese display windows by those of Matsushita.

In contrast, Europe's consumer electronics companies are still absorbing the shock of British Satellite Broadcasting's announcement last month that it was merging with Mr Rupert Murdoch's Sky Television. The merged organisation will broadcast in Pal, the UK's existing broadcasting system, rather than D-Mac, which provides clearer pictures.

D-Mac was seen as a half-way house to HD-Mac, Europe's home-grown high-definition standard which was established in the late 1980s to head off Muse, the Japanese system.

For European electronics companies like Philips of the Netherlands and Thomson of France, high-definition television sets are not just consumer accessories of the future. They are the key to the survival of European consumer electronics and a host of related industries.

High-definition technology will, they believe, find its way into computer, medical, defence and manufacturing systems which will also consume large quantities of computer chips.

"This is why the Japanese have targeted HDTV as a key strategic technology. They wish to dominate tomorrow's economic world," Mr Peter Groenenboom, head of Philips's international consumer electronics division, said earlier this year.

Philips, Europe's largest electronics company, has refused to comment on BSB's merger with Sky and the abandonment of D-Mac.

The Dutch group, uncommunicative at the best of times, has become more reserved since Mr Jan Timmer, its new president, revealed it would make huge losses this year. However, Philips did surface last week to announce it was suing BSB and Sky for losses it incurred as a manufacturer of D-Mac equipment.

The group said it had lost at least £50m.

Mr Jean Caillot, senior vice-president of Thomson Consumer Electronics, reacted to D-Mac's demise in characteristically combative fashion. Mr Caillot, who earlier this year accused the Japanese of having a "strategy of absolute world domination", said Thomson would bring out its own widescreen set early next year. The set will be able to receive D2-Mac broadcasts, the continental European version of BSB's ill-fated system.

When fully-fledged HDTV broadcasts begin in Europe, owners of the sets will be able to receive them by adding a decoder.

As to what programmes the sets will be able to receive, Thomson says Antenne-2, one of France's public channels, will begin broadcasting in D2-Mac early next year. Canal Plus, an independent broadcaster, already provides subscription programmes in D2-Mac.

The French government has put pressure on German authorities to ensure they, too, provide D2-Mac broadcasts.

Mr Caillot accepts that if the intermediate D-Mac and D2-Mac systems are abandoned, Europe's proposed high-definition standard is unlikely to reach the satellite launch pad.

The failure of European HDTV would not just be a setback for Thomson, Philips and other European manufacturers. It would also be a blow for the French and Dutch governments.

The Dutch government said last month it was already providing Fl 15m to Fl 20m (£4.5m to £6.1m) a year for HDTV research and development and was talking to Philips about whether it should give more.

The French government, which has also invested heavily in HDTV, announced last week it was investigating the possibility of broadcasting in D-Mac from earth-based transmitters.

Japanese government officials are impressed by the

speed with which the Europeans have developed their high-definition system.

The Europeans only began working on HD-Mac in 1986; the Japanese have been developing high-definition television for 20 years.

This huge start is only one of the advantages the Japanese have over the Europeans. The other is that the Japanese government, broadcasters and manufacturers are all pulling in the same direction.

NHK, the Japanese broadcasting corporation, has been transmitting high-definition broadcasts for an hour every day since June last year. The broadcasts – which have included opera, sport, travel and fashion – are picked up by sets in public places and department stores around Japan. Apart from the one-hour programme every afternoon, NHK provides high-definition coverage of popular events like sumo wrestling.

At the end of next year or the beginning of 1992, NHK hopes to launch a high-definition channel which will be on air daily for eight to 10 hours.

NHK accepts few consumers will buy high-definition receivers until price falls. Mr Junji Matsuzaki, of NHK's high-definition special projects division, says that, five years from now, HDTV receivers should cost only two or three times as much as conventional sets.

In the meantime, says Mr Masahiro Hashimoto, an HDTV specialist at Japan's Ministry of International Trade and Industry (Miti), high-definition systems will increasingly be used in the industrial and medical fields.

Toppan Printing of Japan has developed a system to print pictures recorded by high-definition cameras. At Shinshu University high-definition cameras have been used to film brain surgery – the resulting images can be used for medical education.

Mr Takashi Fujio, director of Matsushita's HDTV development centre, says these pictures could also be used to allow doctors in one part of the world to diagnose patients in another.

As exciting as these developments might be, Mr Hiroyuki Mizuno, Matsushita's executive vice-president, believes it is in the consumer market that electronics companies will reap the financial reward of their HDTV investment. "It is the consumer market which creates the big bang for new technologies," he says.

"You can look at the example of video cassette recorders. They were used in broadcasting companies, where they were operated by sophisticated engineers. But it was only when they came in to the hands of consumers that they created a huge market.

"When the price of the set goes down to Y1m, maybe 8 per cent of people will be interested in buying it," he says. As the price falls further, Japan's cash-rich young couples will begin buying high-definition receivers in the same way as they now buy BMWs, Mercedes and Persian carpets, he believes.

He concedes the European market might be more difficult to penetrate. Most Japanese manufacturers seem content for now to spend their time perfecting their product in the Japanese market.

There are still technical problems to overcome, such as developing flatter screens. Bulky sets are unsuitable for small Japanese homes, Mr Hashimoto of Miti says.

The Japanese are also ready to wait for Europeans to resolve their problems over what standard to use. Mr Fujio of Matsushita describes the failure to agree on a single international standard as "a big loss for humanity".

Separate systems around the world will make it more difficult to exchange scientific and medical images and information, he says.

But he, like other Japanese managers, accepts that Europe and Japan will have different HDTV systems. Japanese companies concede that if HD-Mac takes off in Europe, Philips and Thomson might try to keep the technology to themselves.

The Japanese do not appear, however, to regard this as an insuperable problem. "If Europe has its own standard, we will manufacture to that standard," Mr Fujio says.

European companies saw HD-Mac as a way of ensuring the Japanese could not flood Europe with the sets they developed at home.

But Mr Jonathan Drazin of Dataquest, a high-technology consultancy, points out that many of the components used in Japan could be used for HD-Mac too.

While Europe frets about the future of its intermediate technology, the Japanese are well on the way to developing fully-fledged HDTV.

It was never going to be easy for Europe to catch up. BSB's defection makes it that much harder.

WORLD ECONOMIC INDICATORS

INDUSTRIAL PRODUCTION (1985 = 100)

	Oct '90	Sep '90	Aug '90	Oct '89	% change over previous year
US	116.1	117.1	116.9	114.1	+1.7%
Japan	129.3	126.1	127.4	120.2	+7.6%
	Sep '90	Aug '90	Jul '90	Sep '89	
W Germany	119.4	118.9	118.1	112.6	+6.0%
France	112.5	113.8	113.8	109.8	+2.5%
Italy	119.5	120.3	117.6	120.2	−0.6%
UK	106.4	106.8	109.5	110.9	−2.2%

Source: national government statistics

UK NEWS

Labour will spell out policies to regain initiative

By Philip Stephens, Political Editor

THE LABOUR party will today signal the start of a campaign to regain the political initiative in the wake of the reversal of its lead in the opinion polls after Mr John Major's move into Downing Street.

The party is preparing to put much greater emphasis on its own programme for government in the wake of Mrs Thatcher's replacement as prime minister, which it acknowledges has necessitated a change in strategy.

Mr Major, encouraged by opinion polls that show him to be enjoying a "honeymoon" period of popularity among voters, is expected to use a speech to party activists tomorrow to underline his determination to rebuild the government's support among working-class voters.

That change of tack – towards what in Westminster jargon is known as "caring Conservatism" – has alarmed Labour MPs, while Mrs Thatcher's departure has led to speculation about Mr Neil Kinnock's leadership of the Labour Party.

Yesterday his frontbench spokesmen dismissed suggestions that Mr Kinnock's grip on the party leadership had weakened as "media hype". Opinion polls indicate that Labour's popularity would rise substantially if he were replaced by Mr John Smith, the shadow chancellor, but Mr Kinnock's colleagues insisted that he would lead the party into the general election.

Predicting a rebound in Labour's popularity, they said the party would move on to the political offensive by combining attacks on Mr Major's "Thatcherite" policies with detailed expositions of its alternative policies.

Mr Roy Hattersley, the deputy leader, will underline the transformation in Labour's approach to European integration in a speech today arguing that it would be "madness" for Britain to stand apart from moves towards a single currency.

His speech follows the publication of a policy document last week indicating that Labour would now be prepared to accept a single currency if it were accompanied by significant measures to promote economic convergence between richer and poorer regions in the Community.

Labour also plans to launch a national campaign designed to underline its commitment to improving the standard of education in the nation's schools. The campaign, which emphasises the need for strict monitoring of standards – will be followed on Thursday by a detailed blueprint for the National Health Service.

The NHS document will underline the present "underfunding" of the health service, but will also argue for a shift in available resources towards preventative care.

Mr Major is expected to spend much of this week reshaping his Downing Street policy unit to prepare for the drafting of a manifesto based on his platform of a "classless" Britain. Mr Brian Griffiths, the present head of the unit, is expected to be among a number of officials who will leave Downing Street.

Anti-war protesters arrested at MoD

By Lynton McLain

THIRTEEN anti-war demonstrators were arrested for obstruction outside the Ministry of Defence yesterday.

Police said that after a peace ceremony at the Cenotaph, they moved in to disperse 40 protesters who had blocked access to the Richmond Terrace entrance to the Ministry of Defence.

Earlier an estimated 5,000 people, including Kuwaiti expatriates and demonstrators from Britain, other European countries and the US, marched to Trafalgar Square to protest against Iraqi atrocities since the invasion of Kuwait exactly four months ago.

In a separate ceremony, Mrs Glenys Kinnock, wife of the leader of the opposition, released 1,400 yellow balloons to highlight the plight of British hostages in Kuwait and Iraq. She appealed to President Saddam Hussein to let the hostages go home in time for Christmas.

"The pressure needs to be kept on because there is a danger that people will forget the hostages," Mrs Kinnock said. "I think people don't realise how many there are."

Wind of recession blows chilly backstage

David Churchill finds little Christmas cheer for theatres and other leisure sectors

WHEN Joan Collins, the former Dynasty star, agreed to play Amanda Prynne in Noel Coward's Private Lives at London's Aldwych Theatre, the play seemed set for a sell-out run.

However, tickets are surprisingly still available, at up to £18.50 a seat, because even the glamour of Ms Collins can no longer automatically guarantee a sell-out every night in the present economic climate.

West End theatres are among those feeling the chill of the recession. Only 39 will be open this Christmas, compared with 44 a year ago.

The run-up to Christmas is a crucial time for the leisure industries but this year the recession and the threat of war in the Gulf is likely to make it a season of little cheer for many.

Mr Kieron Culligan, a leisure analyst with the Henley Centre for Forecasting, says: "It is unlikely to be a bumper year for the leisure industry."

The Madame Tussauds and Rock Circus exhibitions, two of London's top attractions, are also finding the recession beginning to bite in recent weeks. Mr Michael Herbert, chief executive of the Tussauds Group, which is owned by Pearson, publisher of the Financial Times, says: "We are not doing as well as last year in London."

No guarantee of a sell-out: Joan Collins in Private Lives

He says: "It is really all down to the state of the economy, with fewer British people coming to London. Fortunately, we are still seeing an increase in visitors from overseas, so the downturn is not as bad as it could be."

Yet leisure analysts believe the impact of recession might be much worse. Mr Paul Slattery, a leisure analyst with stockbrokers Kleinwort Benson, says: "What we are seeing is a reduction in growth rates rather than the market falling apart."

Much of the gloom surrounding leisure has had a lot to do with the severe financial difficulties surrounding several leisure operators.

Mecca Leisure and Brent Walker, two of the leading leisure companies at the start of 1990, ran into difficulties this year not through slow trading but as a result of high borrowings that were taken on when interest rates were low to finance acquisitions.

Mr Culligan says: "Corporate problems in the leisure sector have been partly self-induced through the accumulation of gearing levels which could only ever have been sustained in a never-never world of non-stop rapid growth."

The effects of the recession on the restructuring of leisure companies was shown last week when Whitbread bought the Berni brand name and most of the restaurants from Grand Metropolitan in a deal worth £115m.

Eating out is the largest of all leisure markets, with an estimated £12.5bn spent last year on all forms of meals outside the home. However, there is little doubt that this is one of the most vulnerable sectors to a consumer recession, with mid-price family restaurants such as Berni among the most affected.

The effect of the recession in other leisure markets is similar. Spending on bingo is down but not disastrously, according to operators such as Rank. Bingo traditionally does well compared with other sectors in a recession because it is a small-cost leisure spend which is part of the social structure for many players.

Like bingo, off-track betting is a small-ticket item that is a steady but unspectacular cash-flow generator for leisure companies. Turnover this year is expected to be up on last year but below the rate of inflation, indicating a slowdown in real terms.

The main effect of the recession on leisure spending, however, has been among high-priced activities such as holidays.

Sales of package holidays for this summer were down by about 20 per cent over 1989. Bookings for next summer, described as "dismal" by one travel agency chain, are reported to be down by a similar proportion.

However, optimism still exists in abundance among leisure operators.

Mr Michael Guthrie, who was Mecca's chairman until last summer, has recently formed a new company, called Bright Reasons, with three other ex-Mecca directors, to search for acquisitions in the leisure sector. "There can be no doubt that leisure in the long term will be the growth business of the 1990s," he says.

Police performance reviews criticised

By Alan Pike, Social Affairs Correspondent

STRENGTHENED performance reviews are the key to more effective policing, the Audit Commission says today.

Unlike industry, it says, the police service does not start with clear criteria for measuring output. Police forces collect a "wealth of data" but it is still not common enough for them to measure the success in quantitative terms.

The commission, the local government watchdog, says the clear-up rate for recorded crime has "limited use" as a performance indicator, with statistics open to manipulation to produce "merely cosmetic results".

The commission recommends a new measurement of primary clear-ups per officer – counted at the time a suspect is charged, summoned or cautioned – rather than calculating clear-ups as a percentage of all recorded crime. It warns, however, that no single measure of performance on crime will prove sufficient.

The commission says management style in the police should be governed by the fact that its officers are professionals with delegated responsibility for taking decisions and using initiative. The counterbalance to that, however, is that officers should be "held accountable for their actions through a performance-review mechanism".

The commission says many building blocks for reviews are in place. But much remains to be done and an overall framework is lacking.

Only about 25 per cent of overall police activity was currently covered by performance measurement.

Performance Review in Police Forces. SO. £5.

UK NEWS

Broker places £8m construction risk

By Richard Lapper

A LONDON insurance broker says it has secured agreement to place one of the biggest UK non-marine insurance risks ever placed in the London market. The deal is worth £8m to London market insurers.

Fenchurch, an independent UK-based broker, placed a complex policy with insurers at the Lloyd's and UK company markets to insure the construction and operation of a 1,725MW combined heat and power gas-fired power station being built by Enron Power Construction at Wilton, near Teesside.

The £750m project will be the largest CHP plant in the world. Fenchurch claims that it is the biggest construction project placed in London other than the Channel tunnel. Total insurance premiums paid by Enron amount to £8m.

Enron's parent company, Houston-based Enron Corp, owns the US's largest natural-gas pipeline system. A group led by Amoco and including British Gas and Amerada Hess will provide gas to the station, which besides contributing electricity to the national grid will also supply electricity and steam to ICI Chemicals plants at Wilton.

Fenchurch describes the insurance package as highly innovative. It provides very broad and flexible cover for the construction company. The deal includes coverage for standard contract works risks (such as damage to equipment occurring during construction) up to a limit of £615m and public liability up to a limit of £150m.

In addition it provides broad cover for two other classes of risk that are sometimes harder to place in the insurance market.

Enron can claim for any damage to plant or equipment that occurs in transit (up to a limit of £150m) and for financial losses incurred through any delay in start-up, up to a limit of £600m. Those could include extra debt service payments on loans contracted to finance the project that may be incurred as a result of any delay in the planned April 1993 completion.

Up to 150 underwriters at Lloyd's of London are involved in the placement.

At Lloyd's, non-marine syndicate 396 led the insurance of an initial layer of cover up to £1.25m for contract works and liability risks.

Marine syndicates 724 and 662 led a second layer of coverage up to £26m for a much broader range of risks. Royal Insurance, Commercial Union and Palatine Insurance as well as Lloyd's syndicates are involved in the insurance of higher layers of coverage.

Money pours into futures market

Peter Marsh investigates speculation that interest rates will be cut

ABOUT £30bn in speculative investment has poured into London's financial futures market in recent weeks, supporting the view that the government will reduce interest rates soon.

Such large-scale gambling reflects speculation that Mr Norman Lamont, the new chancellor of the exchequer, will decide quickly to reduce the 14 per cent base rate to restore growth in Britain's economy.

Many analysts believe a base rate cut of at least half a percentage point will take place this week or next.

The futures activities have also influenced strategy at the Bank of England. In a series of moves last month it promoted its own cautious view that the time is not right to inject cheaper money into the economy.

However, the relative lack of success of the Bank's measures – mainly lending to the banking system at high, penal rates – is thought to have led to frustration at the Bank about its failure to influence the futures market more directly.

The main vehicle for the recent activity in the futures market is the December short-sterling contract on Liffe, the London International Financial Futures Exchange.

The contract will expire on December 19. Investors from banks and securities houses buy contracts with values linked to short-term interest rates.

On Friday night, the short-sterling contract was quoted at 86.80, a discount from a par value of 100, indicating the view that by December 19 three-month interest would be just over 13 per cent. Banks' base rates are directly linked to short-term money market interest rates.

Norman Lamont: speculators bet on him cutting rates

Futures contracts are highly leveraged, meaning that investors have to commit only a small fraction, of as little as 0.1 per cent, of the total value of each contract, which is based on a nominal deposit of £500,000. However, such has been speculation in the December contract that about £30bn has been invested.

The money being bet on this contract has had a big effect on the view about interest rates in the money markets, in which banks lend money to each other at interest rates depending on the period of the loan.

In recent weeks, reflecting speculation in the futures market, the three-month interbank rate has persistently hovered around 13.5 per cent, below the 14 per cent base rate.

That has caused concern at the Bank, which sees itself as the guardian of tight UK monetary policy, even though it has a strictly advisory role in that area to the Treasury.

To damp speculation about interest-rate cuts, the Bank in its money market operations has consistently lent to the banking system at high rates. Even so, the speculation has continued.

Mr Alan Davies, head of economics at Barclays Bank, said: "The Bank of England has been screaming and stamping its feet in an effort to stop the speculation. But people have not been taking any notice."

The Bank is not the only institution to have shown frustration about the difficulties in getting its message across. The discount houses, the nine specialist companies that act as the intermediaries between the Bank and the rest of the banking system, have borne the brunt of the high lending, which has reduced their profit margins.

Some of those groups have become concerned that the Bank has targeted the discount houses, rather than the main participants in the futures market, for the penal charges.

Mr Nick Parsons, group economist at Union Discount, said: "Because of the way the futures market influences today's cash market, you have a case of the tail wagging the dog. The Bank ought to find a way of influencing futures more directly."

An obvious way out would be for the Bank to intervene openly in the futures market. By trading short-sterling contracts, the Bank would make its own views about the future clear for all to see.

However, the Bank is thought highly unlikely to take that step because such an unequivocal expression of a central bank's intentions would destroy the essential uncertainty that is a key part of all futures-market activities.

Invisibles join appeal for tax law clarification

By Barry Riley

A TAX PLEA by international investment managers in London is being backed strongly by British Invisibles, the newly renamed British Invisible Exports Council.

The fund managers say that a controversial tax clause dating from 1970 continues to keep potential business away from London, although the legislation was amended in 1985, and although the Inland Revenue has recently circulated a confidential statement of practice called The Treatment of Investment Managers and their Overseas Clients.

In a letter to the chancellor of the exchequer, Lord Limerick, chairman of BI, says his organisation "shares the prevailing view that legislation is needed to cure certain of the important difficulties".

BI urges that appropriate provisions should be included in the 1991 Finance Bill.

The difficulties arise out of the so-called "section 78" distinction drawn between investment and trading by UK tax law. Foreigners are not liable to income tax on investment income nor capital gains tax on normal investment gains, but where trading activities are carried out, they are liable to tax on the income.

Overseas clients placing their funds for management with UK investment advisers therefore wish to be sure that in no circumstances, even in the case of rapid turnover of their portfolios, could they be deemed to be "trading".

At present, lawyers are unable to give a clear enough view to satisfy overseas clients who will not accept opinions such as "the risk is remote".

Instead, foreign clients place their funds in more legally hospitable jurisdictions such as Luxembourg, or alternatively UK fund managers are forced to incur extra costs by operating through tax havens.

BI's objective is to broaden the scope of exemptions already included in the 1985 Finance Act. It wants the exemptions to be applied to offshore funds, and to subsidiaries or associates of multinational companies.

It also wishes to see an extended definition of the types of futures and options contracts that will be regarded as undeniably of an investment nature.

Asbestosis ruling may cut insurer loss

By Richard Lapper

R. H. M. Outhwaite underwriting agency, a managing agency at the Lloyd's insurance market, has won a preliminary commercial court judgment that might eventually reduce the amount of underwriting losses it faces on US liability business.

The judgment may have an indirect effect on the litigation between Outhwaite and about 1,600 Lloyd's Names, who face losses of about £200m on insurance policies written by Mr Richard Outhwaite. Names back the underwriting activities of Lloyd's syndicates.

The court decision affects a preliminary issue of litigation between Outhwaite's syndicate 661 and two other Lloyd's syndicates, Lark syndicates 179 and 384.

The Lark syndicates, which insured US asbestos producers, reinsured with Outhwaite 661. Like many other insurers, Lark had to meet a wave of claims stemming from court awards to victims of asbestosis.

In order to simplify the payment of claims, Lark participated in a deal struck in the early 1980s between US asbestos producers and their insurers.

Outhwaite has refused to pay reinsurance claims met by Lark under the deal, on the ground that the payments were voluntary.

Mr Justice Hirst found in the preliminary judgment that by signing a printed form of reply from Mr Lark's broker to a notice of the decision to adopt the US deal, Mr Outhwaite had not signed a legally binding agreement to vary the reinsurance contract.

Ruling today over Hanson dispute with pensioners

By Eric Short, Pensions Correspondent

THIS morning Sir Nicolas Browne-Wilkinson, Vice-Chancellor of the Supreme Court, the senior judge of the Chancery Division, is due to deliver his full judgment on the dispute over proposed changes in pension arrangements within Imperial Tobacco, now part of Hanson.

His ruling will have important implications for relations between the employer, the trustees and the beneficiaries of an Imperial company pension scheme.

The scheme was closed to new members in 1986 and pension increases, which previously had matched rises in the Retail Prices Index on an ex gratia basis, were formalised to guarantee RPI increases up to 5 per cent.

In the summer, the committee of management offered pensioners the choice of switching to another fund, the smaller Imperial Retirement Benefit Scheme, taking a reduced pension in certain cases but with RPI increases up to 15 per cent, or staying in the existing scheme with its lower limit on increases.

Many pensioners, wary that this was a ploy by the company to acquire the use of the substantial surplus in the scheme, rumoured to be as much as £230m, formed a pressure group, Imperial Pensioners Action Call (Impac) to fight the proposal.

They claimed that the committee had the power within the existing scheme to increase pensions beyond the guaranteed 5 per cent without the company's agreement.

In October, the dispute went to the Court and Sir Nicolas ruled that while the management committee could not increase pensions without the company's consent, neither could was the company able to veto in advance any such increases.

He stated that the company must conduct itself in such a way as not to destroy the relationship of trust and confidence between employer and employee "without reasonable and proper cause".

He was also puzzled why the benefits could not be provided by the existing scheme.

Once his full judgment has been delivered, the committee of management can go ahead with formulating new proposals.

The need for such proposals to be issued quickly has become paramount. The pensioners receive their pension increases on November 1, based on the RPI value for the previous July.

But the company would not let the committee pay the 9.8 per cent RPI increase as wished.

Instead, pensioners received a 5 per cent increase at the beginning of November, with a commitment from the company to pay the balance once the new proposals had been presented and accepted.

Members of Impac are worried that the company, having failed to get them into another pension scheme, will now try to use the surplus for the company's benefit by attempting to bring in other Hanson employees to the existing scheme.

Sun Alliance raises house insurance rates by 10%

By Richard Lapper

SUN ALLIANCE, the UK insurer, last week became the latest company to increase its rates for house buildings insurance.

The company, the biggest insurer in the sector, with an estimated 17 per cent of the market, announced an increase of 10 per cent, following the examples of Legal & General, Royal Insurance and others earlier last month.

The increase takes Sun Alliance's basic rate from £2 to £2.20 for each £1,000 insured.

The increases follow heavy losses after the storms last winter and record claims for subsidence. As a result of the storm losses, UK companies are facing increases of about 400 per cent in the price they pay for reinsurance.

Sun Alliance, which has bought less reinsurance than its competitors in recent years, is reported to have been quoted £19m compared with £4m last year for a reinsurance contract covering losses over £120m up to £260m.

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Invisibles join appeal for tax law clarification

By Barry Riley

When you're in our position, you have to be a great airline.

While necessity may be the mother of invention, in the case of Qantas, it was the founder of an airline.

Being far from the major cities of the world, Australia learned to fly long before most countries even thought of it.

So it was, that 70 years ago Qantas first took to the wing; quickly discovering that, while technology may defeat the tyranny of distance, only service of the highest standard can effectively conquer time. As with most things, craft is in the detail. More comfortable seats in every class, a music channel solely devoted to sending you to sleep, even a napkin with a bespoke buttonhole; proof of a service that goes a little further.

So, when next you travel on business, choose the airline that's been flying longer, longer.

Our flights somehow seem comfortably shorter.

QANTAS The Spirit of Australia.

CONSTRUCTION CONTRACTS

Trafalgar House projects

Contracts totalling £22.7m have been won by the construction division of TRAFALGAR HOUSE.

The North-East regional office of Willett and Cementation Construction has been awarded contracts totalling £8m. The works are for Press Offshore at Wallsend where large reinforced bases are being constructed for North Sea oil modules and two contracts at ICI's works at Billingham.

In North Shields there is a contract for Cosalt Developments involving refurbishment and strengthening of the river frontage of the Fish Quay area and also two projects for Northumbrian Water, one at a sewage storage treatment plant at Witton Gilbert near Durham and the other an extension to its Broken Scar treatment works at Darlington.

In Florida, St. Petersburg-based Federal Construction has won contracts worth £7.5m. The largest is for the construction of an eight-storey outpatient centre at Sarasota Memorial Hospital which will take 11 months to complete.

The other contracts include 16,000 sq ft of additions and renovations at Seven Rivers Hospital and two contracts for housing projects in Clearwater.

Trafalgar House Construction Management has been awarded a £4.2m contract by the Corporation of London for work at 1-5 London Wall involving construction of new LEB chambers under the pavement in Finsbury Circus together with new electrical floor ducts feeding five new risers constructed in internal lightwells.

The Ministry of Defence has awarded Cementation Major Projects a £2m first phase of a two-stage design and construct contract for a new mapping facility building in west London. Construction is due to start early in 1991.

Upgrading City of London building

TROLLOPE & COLLS (CITY), a Trafalgar House construction company, has been awarded a £4.5m contract by Marubeni Developments Europe for the refurbishment of 120 Moorgate in the City of London.

As well as refurbishment, the work includes redecoration and installation of new mechanical and electrical systems to the mid-basement and five upper floors of the building.

The project is complicated by the occupation of the ground, first and third floors by existing tenants and considerable out of hours work is necessary.

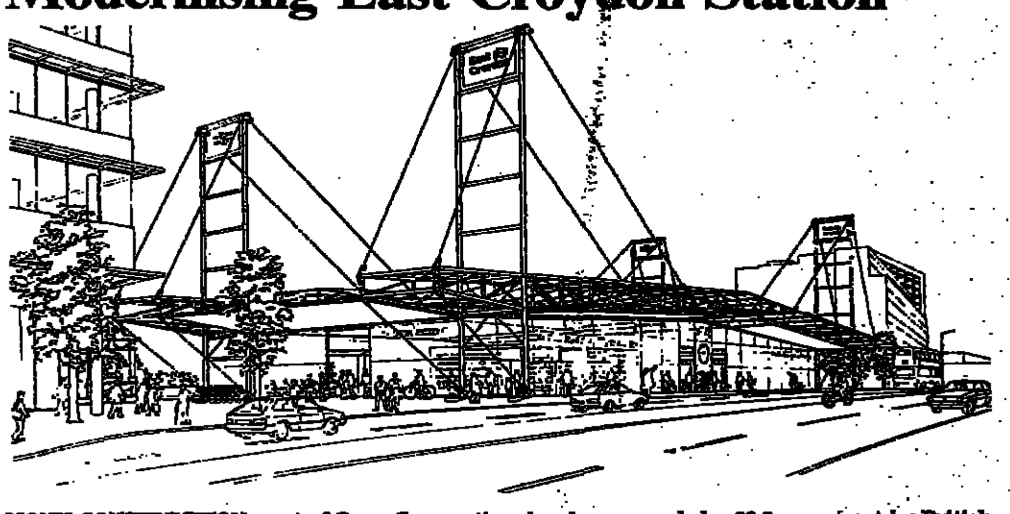
A new entrance hall is being constructed using marble and granite together with a stainless steel spiral staircase, balustrades and handrails.

The mid-basement is being converted from conference and storage rooms to offices and new toilet facilities and the other floors will have raised floors, suspended ceilings and new perimeter decorations.

Trollope & Colls (City) has already undertaken demolition works prior to starting the refurbishment and is also cleaning the precast concrete exterior of the building.

The project is being managed by Trafalgar House Developments and completion is scheduled for Christmas 1990.

Modernising East Croydon Station



MONK CONSTRUCTION, part of Davy Corporation, has been awarded a £3.9m contract by British Rail Network Southeast to rebuild East Croydon Station after demolition of the existing building, originally built in 1894. Demolition of the existing building will start early in December with completion of the rebuilding due in 61 weeks.

Access to Eagle Centre

A £1.3m paving contract in Derby has helped BRIGGS AMASCO, the roofing and cladding contractor, to win a total of over £5m of new work in recent months.

The contract, to provide 9,600 sq metres of mastic asphalt waterproofing and paving on the elevated service roads at Derby's Eagle Centre is for CIN Properties, the property arm of the British Coal Pension Funds. Briggs Amasco's Leeds branch is working seven days a week on the refurbishment of the shopping centre with the installation of internal gutters under expansion joints taking place over the weekends.

Another contract, worth £800,000, is at Royal Victoria Place in Tunbridge Wells. Briggs Amasco's Iver-based specialist asphalt unit is laying 10,000 sq metres of roofing and the same amount of car park paving. The one-year contract is due to start in mid November, and Mowlem Management is the main contractor on the project.

Elsewhere, the Belfast branch has won a £900,000 refurbishment contract from aircraft manufacturers Short Brothers. The two-phase contract involves the stripping of an old factory roof and replacing it with 23,000 sq metres of Wards CR1200 composite panel.

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Contracts totalling over £10m have been won by Mowlem Southern Civil Engineering, a division of MOWLEM CONSTRUCTION. The largest, at £2.6m, is for an access road to the proposed Maidenhead business campus.

APPOINTMENTS

Chairman of James Neill Holdings

■ Mr Alan Fletcher has relinquished his post as chief executive of JAMES NEILL HOLDINGS and become deputy chairman. Mr David Andrew Martin will be joining the group as chief executive and a director. Mr Martin was previously a group director and general manager of Renold, specialist gear and chain group.

■ N.M. ROTHSCHILD & SONS, and N.M. Rothschild Asset Management have appointed Mr Anthony Goodfellow as their representative in Bermuda from January 1 when Sir Edwin Leather retires. Mr Goodfellow retired last June as general manager of the Bermuda Monetary Authority.

■ ROVER FINANCE, jointly owned by Rover Cars and Lombard North Central, has appointed Mr Graham Woodhouse as executive vice chairman. He was director, Lombard's northern executive office, and succeeds Mr Nick Jefferies who moves to a new post in Lombard Motor Finance.

■ MAI, an international services group, has appointed Mr Roger Laughton as the chief executive of MAI BROADCASTING, which is currently preparing a Channel 3 licence bid. He is director of co-productions at BBC Enterprises.

■ Mr Alastair Cuming has been appointed consultancy director for investment strategy at NOBLE LOWNDES. He joined earlier in the year from Gartmore Pooled Pensions.

■ SWAN HUNTER INTERNATIONAL has appointed Mr Adrian Sellers as commercial director; Mr Peter Forrest as director, strategic Development; Mr Simon Keith as marketing director; and Dr A.D. Hewitt as head of design.

■ Mr David Dingle has been appointed marketing director, P&O CRUISES (UK), and Princess Cruises Europe. He was commercial director of Canberra Cruises. Mr Nigel Esdale has been promoted from marketing controller to commercial manager, Princess Cruises Europe. Mr John Marsden becomes operations and services director for P&O Cruises (UK).

■ Mr David Sowerby has been made group finance director (elect) of THE ALUMASC GROUP. He succeeds Mr Michael Morton who retires in January. Mr Sowerby was group financial director at the David Brown Corporation.

■ Mr Frederick D. Mercaldo has been appointed managing director of UMI GROUP. He was operations director with Foxboro International.

■ Mr Stuart Bernau has been promoted to general manager, commercial lending, at NATIONWIDE ANGLIA BUILDING SOCIETY. He was assistant general manager.

■ The BODDINGTON GROUP, a hospitality and leisure company, has appointed Mr Christopher Henry to the group board. He joined as group property director on June 1.

■ Mr Dominic Cadbury has joined the main board of THE ECONOMIST NEWSPAPER as non-executive director. Mr Cadbury has been chief executive of Cadbury Schweppes since 1984.

■ HEWLETT-PACKARD has promoted Mr John Golding *(pictured)*, general manager, UK sales region of Hewlett-Packard Ltd, to UK managing director.

Nissan Primera. Compare this to what you call performance.

Nissan announces the Primera.

A car that has spent the past several years as the centre of attention of test tracks, windtunnels and test teams across Europe.

A car that was in fact built for only one, much more important, test.

You are that test (in fact you could say, the Primera was built to be compared).

Let's start with the engine compartment and take the Primera's performance as an example.

Firstly you notice that every gasoline powered Primera model is equipped with a 16 valve DOHC engine designed to take up less space and deliver more power.

This means we can offer you the following numbers for comparison.

The Multi Point Injection 2.0E engine: 150 hp and a top of 220 km/hr. The Single Point Injection 2.0i engine: 115 hp and a top of 200 km/hr.

The completely new Multi Link Front Suspension system ensures incomparable roadholding, on byways and highways, be they pebbly or asphalt smooth.

The sophisticated aerodynamic exterior design contributes to a low cd-value and a high resistance to side-winds.

However, the Primera was not created merely as a technical advancement over other cars. Its comfort, its styling, its quality- all are designed to stand up to your scrutiny.

As you realise as you take a close look at its interior.

And as soon as you sit back and think about the bumper-to-bumper 3 year warranty we give you.

And your comparison is not only true for the four door sedan but also for the five door hatchback and station wagon.

There now seems to be only one question left unanswered: when would you like to compare the Primera?

NISSAN

Nissan Primera.
The new performance car for a country called Europe.

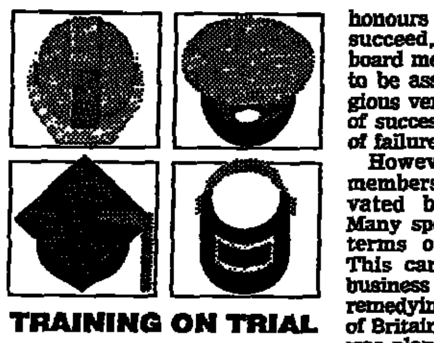
THIS MODEL IS A NISSAN PRIMERA GT. ALL SPECIFICATIONS MENTIONED ARE BASED ON THE MODEL SHOWN AND SUBJECT TO POSSIBLE CHANGES.

MANAGEMENT

This series continues by highlighting the need for high quality executives to run the Tecs and examining what motivates them to accept the challenge

'Colleagues said if people like me did not get involved, who would?'

By Lisa Wood and John Gapper



TRAINING ON TRIAL

Why are they doing it? It is the most intriguing of the questions hanging in the air as chief executives and managing directors of many of the best-known British companies take on responsibility for the country's industrial training. They are not being paid, and have little time to spare. Yet there is no shortage of volunteers.

Sceptics prefer to remain anonymous in the initial rush of enthusiasm for Training and Enterprise Councils. "Most of my colleagues from the private sector are superb," says one local authority chief executive. "They have a lot to give, and they give of their time generously. But I wonder what a few of them are doing it for. Perhaps it's the kudos they're after."

It is more than a matter of idle curiosity. The 1,200 chief executives who have so far volunteered to sit on the boards of 82 Tecs in England and Wales will decide their success or failure. If they lose interest, or become disillusioned, the fate of Tecs could mirror that of the Private Industry Councils (Pics) in the United States which inspired them.

A deterioration in the calibre of the business leaders involved is one reason for the patchy quality of Pics. For Britain to break with past failures in vocational training, and improve the management of publicly-funded training schemes, one over-riding uncertainty must be overcome: the long-term commitment of Tec directors.

The reason why the government wants the directors is clear. It hopes to end decisively the chequered history of joint control of training which was established in 1964 with Industrial Training Boards. Trade unions and local authorities have been excluded from equal participation. Instead, the government has insisted that chief executives will comprise two-thirds of Tec boards.

A full-time chief executive – about half of them civil servants on three-year secondments – will control day-to-day running of Tecs. The boards, led by private sector managers, most meeting once a month, are there to apply management skills and establish a strategy. They must combine public and private funds to raise the level of skills in their regions and towns.

The government hopes these business leaders will impregnate a crusading spirit into their communities and persuade other managers of the importance of training. It wants them to encourage workers to demand better training, and improve the way in which local providers such as colleges of further education and training agents operate.

It trusts that business leaders such as Alastair Morton, chief executive of Eurotunnel and a man known as a tough negotiator rather than an idealist, will improve the priority given to training. Indeed, Tec boards have already shown themselves capable of fiercely lobbying the government on funding and the rules governing publicly-funded training.

Roger Dawe, chief executive of the Training Agency (the arm of the Department of Employment which is handing over responsibility to Tecs) says the government believes the best way to influence attitudes to training is to give managers control. He says Tec boards should become missionaries for enterprise rather than simply supervising existing training programmes.

The motives of senior managers for joining Tec boards will govern whether they operate effectively, and whether they lose interest. A simple wish for recognition is one acknowledged motive. One Tec chief executive says he actively fosters competition to get on the board. The prestige of being seen as a local business leader has stimulated many.

So far, only 20 Tec board members are said to have resigned; those solely seeking recognition may follow as soon as their names appear on an honours list. Tecs which do not succeed, quickly risk losing board members who only want to be associated with a prestigious venture. Virtuous circles of success – and vicious ones of failure – could develop.

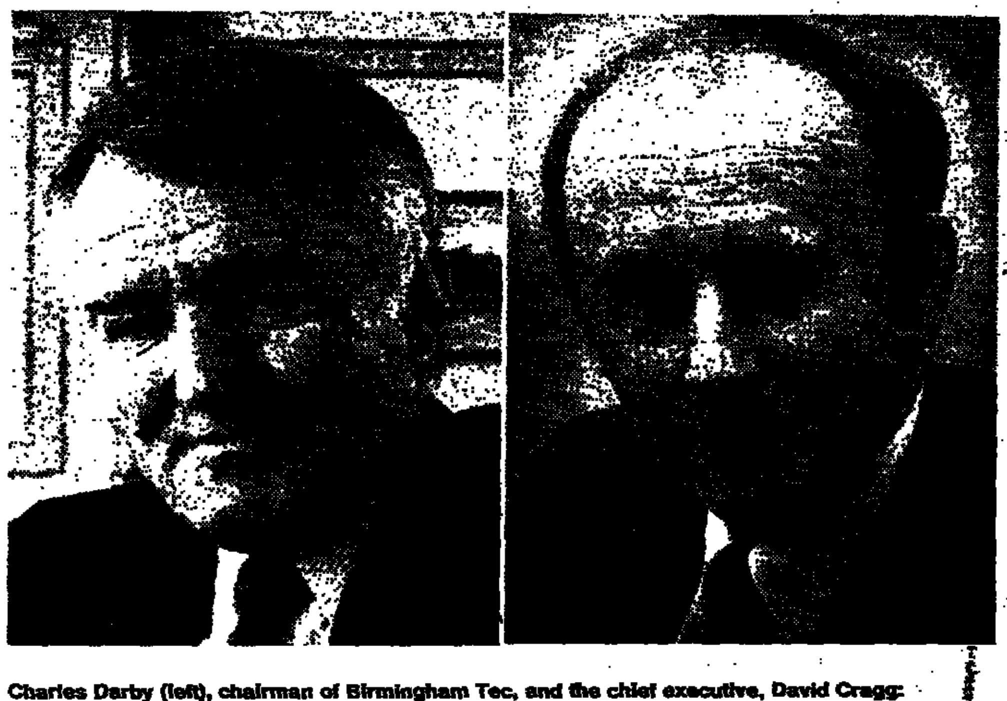
However, most Tec board members say they are motivated by something more. Many speak of the venture in terms of national idealism. This card – the chance for business leaders to take part in remedying a persistent cause of Britain's industrial failure – was played successfully by Sir Norman Fowler, the former employment secretary, in the early days of Tecs.

"I was at a dinner and I heard Norman Fowler speak about world class objectives in training. I was impressed," says Charles Darby, a director of the brewing and hotels group Bass and chairman of Birmingham Tec. The government has tried to reinforce the feeling that board members are participating in a historic venture through advertisements and briefings.

Eric Dancer, chairman of Devon and Cornwall Tec and managing director of Dartington Crystal, was already convinced of the need to participate. "My company trades all over the world. I see the strengths of the international competition. As a nation we really do have to improve our performance, and I want to play my part," he says.

This visionary atmosphere could lead to problems in sustaining long-term commitment to Tecs. Among the main ones is the limit on what many Tecs will be able to achieve in practice. Michael Howard, employment secretary, has abandoned the targets set by Sir Norman and public expenditure which would help Tecs achieve them has been cut.

Some doubt whether Tec directors who are imbued with the spirit of idealism will manage effectively. Richard Guy, chief executive of South and East Cheshire Tec, says directors who see their work as charity may avoid hard decisions. "If you join a board because of a vague view that you want to do good, you will not rock the boat," he says.



Charles Darby (left), chairman of Birmingham Tec, and the chief executive, David Cragg: "It is going to be a long hard haul, and we are going to have to deliver"

As the initial fervour fades, the work of Tec boards may also become harder, and less inspiring. "It was very exciting discussing principles, structures, allocation of funds and writing the plan," says Darby. "Making it work is going to be a long, hard haul, and we are going to have to deliver. That could mean we may have to be more hands-on."

This could be testing for non-executive Tec directors from companies in which training policy is the responsibility of personnel directors. So far, Tec chief executives say there has been little problem with the competence of directors. "It has not been an issue for us," says Gregory Hyland, of Thames Valley Tec.

"Directors would be hard-pressed perhaps to conduct negotiations with training providers – but that is not what they are about," he says. Guy talks of a partnership between chief executives and directors. "My board needs advice about the workings of programmes, but they bring to me high-level strategic thinking," he says.

Many Tecs are feeling their way gingerly in the relations between directors and staff. A cultural gap has been opened by the government's insistence on Tecs taking staff seconded from the Training Agency. Although Tec directors admit that civil servants bring practical knowledge of public schemes such as Youth Training, they fear divided loyalties.

Civil servants have been trained in a culture of offering service to the public. The aim of many Tec directors is to alter training to get the best value from limited funds – possibly selecting the people they regard as most suitable for training. One chief executive says wryly that some of his staff complained about this as "not fair".

There is equally a prospect of tension within boards in relations between the two thirds of directors who are private sector managers and others. Many of the latter directors – including local education authority officers, union officials and people from voluntary organisations – believe they represent interests as well as lending expertise.

Anne Weinstock, chief executive of the Rathbone Society, a mental handicap charity, is a director of Manchester Tec. "I thought it would take too much of my time to get the message of equal opportunities across to boards of business people. But colleagues said if people like me did not get involved who would represent their voice?" she says.

In the early stages, these potential tensions have largely been contained. Many Tecs have also built up links with councils and local education authorities. The government did not include these – or other big public sector employers such as the National Health Service – among obligatory Tec members, despite the role of the public sector in local employment.

But many local authorities, like trade unions, have made the pragmatic decision to get involved with Tecs. Stephen Clark is chief executive of Labour-controlled South Tyneside Metropolitan Borough Council, and was nominated by councillors as a member of Tyneside Tec. His presence has been accepted by the private sector managers on the board.

A growing mesh of informal working relationships is being forged between his authority and the Tec. However, all Tecs face the problem of local authorities believing their authority in areas such as education is being usurped. "There are no irreconcilables between us. But it would be unrealistic to claim that there are no tensions," says Clark.

The unusual powers now being accorded to private sector managers through Tecs face little prospect of being seriously disturbed. The Labour Party not only supports the idea of Tecs but thinks it would be wrong to change the structure of boards into equal representation for local authorities, unions and businesses.

"We do not plan to go back to the old tripartite approach but we do want some flexibility," says Henry McLeish, Labour's training spokesman. "We support the concept and recognise that employers make important contributions. The arrangements could be ruptured if we took any hasty actions for party political reasons."

This means the experiment is likely to continue for some time. It will only seriously be threatened if Tec directors start to lose interest and resign *en masse*. The government will have to ensure that the difficulty and variety of tasks facing directors does not lead to disillusionment when the initial enthusiasm wears off.

The first article in this series was published on November 26.

BULLETIN BOARD

■ Schools and colleges in south and east Cheshire have each been given £2,000 by their local Tec to improve their careers libraries.
South and East Cheshire Tec has linked up with the education authority to form a Business Education Partnership, jointly chaired by the local director of education and a private sector member of the Tec board.
The partnership is marketing the government's Youth Training scheme under its own headings, offering "careerships" or "traineeships" to local school-leavers. The first guarantees a job from the start of training.
The Tec is one of those which will pilot the government's idea of vouchers for school-leavers to choose their own form of training. The donations to schools and colleges are intended to help young people make an informed choice.

■ Employers moving to a business park in Newcastle-upon-Tyne, including British Airways, Cellnet and the Automobile Association, are being offered customised training and recruitment packages by a Tec.
Tyneside Tec has formed a partnership with Tyne and Wear Development Corporation to train the long-term unemployed and develop training packages for companies moving on to sites in areas where heavy industry used to be.
Programmes, which will include basic skills training, are being drawn up for the £200m Royal Quays scheme in north Tyneside, aimed at areas of high unemployment near the quays.
The corporation wants to work with the Tec to ensure that people living near its sites can benefit from the jobs it creates. It has commissioned the Tec to act as its training consultants on each of its big projects.

■ Rotherham Tec, which operates in an area of declining traditional industries and high long-term unemployment, is developing an intensive counselling programme for people having great difficulty in getting back to work.
Intensive counselling is being given to these people by counsellors seconded from the Department of Employment. Money is being saved by reducing the scope of "action plans" for the unemployed who already know their training needs.
Rotherham also plans to launch a "Certificate of Personal Competence" in conjunction with the South Yorkshire Open College Federation. This will serve as a record of basic skill levels and experience on "taster" courses.

LEGAL COLUMN

Yves Saint Laurent declares war on world's counterfeiters

By Robert Rice, Legal Correspondent

MR YANN KERLAU, general counsel of Yves Saint Laurent Parfums, estimates that the counterfeiting industry worldwide costs legitimate business £3.5bn each year.

In the US and Europe, about 250,000 jobs are also lost each year as a direct result of counterfeiting.

Counterfeit fragrances and cosmetics cost YSL Parfums £35m each year in lost revenues, approximately 10 per cent of its annual turnover.

As fragrances and cosmetics account for approximately 88 per cent of the annual sales of the YSL Group, the size of the loss is considerable.

That, however, is only the identifiable cost to YSL caused by counterfeiting. The damage that counterfeiting does to the company's reputation is less easy to quantify.

YSL uses approximately one litre of essential oils distilled from flowers at Grasse, in southern France, to make 200 to 300 bottles of perfume. Counterfeiters may make as many as 1,600 bottles from one litre of essential oil.

As a result, the counterfeit products are very diluted and last a relatively short time – sometimes as little as an hour.

Customers buying inferior counterfeit goods, often at prices very close to the real thing, are understandably dissatisfied with the quality of what they believe are genuine YSL products.

After years of barely containing the matter, YSL has adopted a policy of using the law wherever possible to tackle counterfeiting, and has backed it up with an annual budget of £3.3m.

It has hired its own investigator, the only company within the industry to have done so.

The new approach appears to be paying off. At the end of October, YSL very publicly destroyed part of a counterfeit haul of its perfume Opium, with a street value of between £10m and £11m, seized from an illegal factory in Edmonton, London, in 1987.

The three people involved were sentenced to between eight and 16 months in prison. Since that time, however, the maximum penalty for counterfeiting has been raised by the Copyright Designs and Patents Act from two to 10 years. The message of that should not be lost on UK counterfeiters.

Much of the counterfeiting of fragrances, and to a lesser extent of *haute couture*, centres on Asia. YSL has carried out 600 raids in Bangkok alone during the past six months.

In what Mr Kerlau regards as a vital breakthrough, thousands of documents seized in raids in Grasse and Kuala Lumpur have established links between a producer of essential oils in Grasse, and operations in Malaysia, Taipei and Singapore that manufacture counterfeit YSL, L'Oréal and Chanel fragrances.

YSL is now taking action against 10 companies in Paris and is claiming a minimum of £1m damages – a sum that might multiply five times once the 5,000 documents seized in the raids have been analysed more closely.

Although YSL believes its own campaign is beginning to have effect ("If I were a counterfeiter, I would choose a different company"), Mr Kerlau accepts that the situation in general is getting worse.

A worldwide regime for tackling counterfeiting, or at the very least a more consistent approach from industry, is very much overdue, he says.

Together with Cartier and Chanel, YSL has been lobbying the General Agreement on Tariffs and Trade in the hope of getting measures to tackle counterfeiting included in the intellectual property proposals that have been under discussion in the Uruguay Round of trade talks, which come to an end in Brussels this week.

Mr Kerlau remains, however, "amazed by the lack of strength shown by the EC on this subject". He has talked to the European Commission about the need to take the matter seriously and put pressure on Asian governments to enforce the law.

Everybody knows who the specialists are, he says. Korea for fragrances and *couture*; Singapore for the general manufacture of counterfeit goods; Indonesia for perfumes; and Thailand for *couture*.

□ □ □ □

SOLICITORS S. J. Berwin & Co, first to take on a barrister to set up the firm's own High Court advocacy department, are claiming another first – first into Prague.

The firm has formed an association with Klein, Holec, Doskova, Janout and partners, a Czech law firm. Given that it has only been possible since July 1 for Czech lawyers to form private law firms, S. J. Berwin has been very quick off the mark.

The joint office in Prague will be headed by Dr Bohuslav Klein, the former director of legal services for the Czechoslovak chamber of commerce and industry. As one of the most experienced commercial lawyers in Czechoslovakia and a man who has played an important part in the drafting of the new company law and joint venture legislation, he represents something of a catch for S. J. Berwin.

Dr Klein confirms that even though his law firm is hardly out of the cradle, it has not lacked for suitors. He has had approaches from seven or eight London law firms since July.

Why did he choose S. J. Berwin? "S. J. Berwin is dynamic – which is very peculiar in Britain, I must say." It might also have something to do with the fact that he has known and worked with Dr Julian Lew, head of S. J. Berwin's central and eastern Europe practice for 10 years.

Prague is an interesting move for S. J. Berwin. Much of the basic framework of the laws necessary to boost private ownership and attract foreign investment are in place, but the commercial code, some necessary tax reforms and the detailed machinery for transferring the ownership of industry from the state to the private sector are unlikely to be in place before the spring of next year.

Are they not therefore getting a little ahead of the game?

Dr Lew says there is already considerable activity. More than 1,000 new companies have been approved since December last year and although much of the activity involving foreign investors is on a small scale at the moment, there is little doubt in the minds of most observers that the Czech and Slovak peoples have a strong desire to restore their country to the economic and industrial power it was before the Second World War.

Czechoslovakia will have a pivotal role in the economic revival of central Europe, he says.

Six months ago, Dr Klein says, there was a popular movement against foreign investment. Now, however, the mood has changed. The people, he says, have realised that, far from threatening their jobs, foreign investment may represent the only real hope they have of saving them and of creating new opportunity.

There is still a certain anxiety about the high level of German foreign investment. The Czechs accept that inevitably the level of German involvement will be high, but the people are anxious not to be taken over by Germany. The involvement of British, Dutch and US companies is therefore vital.

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Sceptics suggest Blyth Dutton's marriage made in heaven may turn out to be a shotgun wedding

THE LONDON law firms Lawrence Graham and Blyth Dutton have announced wedding plans. After a brief engagement, the happy couple will tie the knot on February 1 1991.

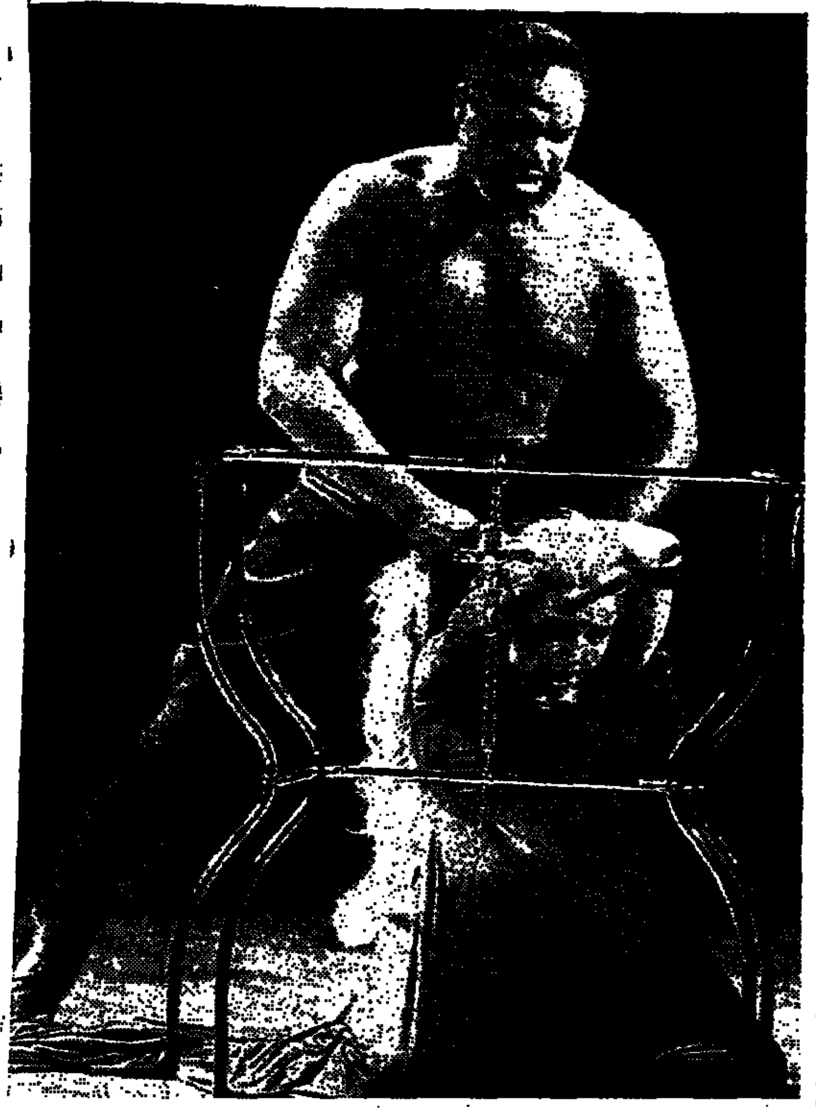
The merged firm, which will practise under the name Lawrence Graham, will have 59 partners and more than 125 other fee earners, making it about the 17th-largest law firm by size, according to the 1990 Legal 500.

The merged firm will be "centred in London at 190 Strand", the present offices of Lawrence Graham, all of which makes it begin to look more like a takeover than a merger, and adds credence to a document that has being doing the rounds.

Headed "To all Blyth Dutton staff", it begins with the plaintive cry: "I am a solicitor at BD and I am deeply worried about my future. You certainly should be, too." It goes on to make a number of allegations about the partners' motives for seeking a merger with Lawrence Graham, suggesting that morale within the firm is far from high.

This is the first important law firm merger for 18 months. Whether it is a marriage made in heaven or a shotgun wedding remains to be seen.

ARTS



The most mysterious and magical of operas

Pelléas and Mélisande

COLISEUM

The new English National Opera *Pelléas* opens fresh avenues of approach to this most mysterious and magical of operas. Apparently unbridgeable contradictions are involved in mounting it in this theatre at all: the presentation in English (Hugh Macdonald's) of a French opera widely believed to be untranslatable, and in a huge auditorium of a music-drama intended for an intimate theatrical space, where gossamer vocal inflexions and details of instrumental colour may resonate with added meaning.

These contradictions were in fact resolved the last time the company mounted this opera (in Harry Kupfer's 1981 production, given only a single season); now the arguments in favour of Debussy at the Coliseum seem beyond dispute. I cannot remember when last I heard here longer stretches of subtle, fine-brush word-singing – recently one had begun to wonder whether word-audibility was deemed less important in ENO shows than Productions Values – or felt an audience more ineluctably drawn into a theatrical web of notes and words.

The theatre shrinks. This is the particular triumph of Mark Elder, the 1981 *Pelléas* conductor, who returns to the music in superbly authoritative form, with renewed powers of balance, singer-accompaniment (he only occasionally allows the sung lines to be covered), pace, control of dynamics, and drama-direction. Elder's is a notably cool view of the opera – the erotic rapture of the tower and penultimate scenes is kept leashed – but on its own terms, and since it chimes so exactly with David Pountney's production and Marie-Jeanne Lecca's designs, it is hard to fault.

As one might imagine, Pountney's *Pelléas* is unashamedly bold in its occupation of the full sweep of the Coliseum stage (this causes, I guess, visibility problems to those seated on either edge of the stalls), unsparing of its performers' athleticism, everywhere concerned to create a new theatrical language in which the opera might speak directly in Coliseum conditions. His signal achievement is to dramatise the opera's inner workings on a convincingly large scale while at the same time remaining strictly faithful to its ebb and flow (as Pierre Boulez put it) "between the most implacable realism and the most impalpable oneirism".

Lecca's Allemonde is harshly incisive in outline yet dream-like in substance, and full of potent, fascinating images; mist, gauze and nebulous prettiness are banished. Colours are black, gunmetal, grey, white (only Mélisande, in the later stages, wears red and then green); costumes are a time-travelling mixture of wimples, high collars, Nordic-type military buttoned tunics, and a brand of sterile Art Deco or futurist chic. (I don't understand why Mélisande first appears wrapped in nothing more than a big bandage.) Central focus of the set is a moated platform, with water below, walkways across, and modern walls ringing its edges, one of them gashed open, its broken bricks spread across the front of the stage.

This is a intriguingly timeless world, cogently patterned: the sun never breaks through, happiness and love are entirely foreign to its inhabitants, and terrible violence inevitably awaits the two young people struggling to break through its barriers (Pountney's use of water, air and light at climactic moments is heart-wrenching, and only Mélisande's hair, so long it drew titters when tumbling from on high, needs re-thinking). In contrast to some of this producer's more extravagant "house-style" productions, the design properties never threaten to overburden the acting and singing powers of the principals.

This is above all an inspired evening of ENO ensemble performance: Pountney, Elder and the cast give an example of the responsiveness mutual and corporate, the group discipline, that can make opera the most mesmerising of all the arts. The evening is dominated by the magnificent Golaud of Willard White, in a characterisation to set beside his (sung) Porgy and (spoken) Othello: a figure of frightening physical might ("You are a giant", Mélisande sings, accurately for a change) brought horribly to his knees. The dark, noble bass-baritone is in peak condition, each verbal and timbral nuance judged with the understated confidence of the mature artist.

Worthy partners of the tragic central figure which here Golaud inevitably becomes are Cathryn Pope's wonderfully youthful Mélisande, wilful, vulnerable, spontaneous, and at the end deeply moving, sung with the cool clarity and precision of one born to play the part; and John Connell's unusually passionate Arkel, his bass timbre excellently contrasted with White's. Thomas Randle's Pelléas, a shy, handsome figure in metal-rimmed glasses, is aptly outlined, but now needs to find more romance in the music, more bloom on the tone; Anne-Marie Owens (Geneviève), Christopher Ross (Doctor), and Yvette Bonner's brilliantly boyish Yniold are already exactly in place. Altogether this *Pelléas and Mélisande* forms, as it should, one of the peaks of the company's 20th-century opera season.

Max Loppert

SPONSORSHIP

Tax inspector looms

The political turmoil of the past few weeks could not have come at a worse time for the arts sponsorship industry. Officiousness by local tax inspectors in Scotland and Manchester has sparked off its biggest crisis.

The inspectors decided that companies sponsored the arts for promotional gain. Therefore arts organisations, despite the fact that they are invariably registered as charities, should be classed alongside advertising agencies and PR consultancies as business operations in the marketing field, making them liable to Corporation Tax on their sponsorship income. The Scottish Chamber Orchestra and the Hallé were confronted with tax demands on 35 per cent of their sponsorship revenue, backdated many years. If the argument was accepted, and extended throughout the country, the role of sponsorship as a major funder of the arts in the UK would be damaged, and arts organisations would either have to come up with complicated accountancy schemes to avoid the tax or face bankruptcy.

The Association for Business Sponsorship of the Arts moved quickly and approached the Minister for the Arts, David Mellor. He immediately realised the potential of the problem and contacted Treasury Ministers. Everything looked on target for a reassuring statement that the tax inspectors had acted on their own initiative and that the arts would remain exempt from Corporation Tax.

But then David Mellor's time was totally absorbed in managing John Major's campaign for the premiership, for which he was rewarded with advancement to the Cabinet and the Treasury, and the anticipated announcement failed to arrive. On Thursday a new Arts Minister, Timothy Renton, assumed control.

It seems highly likely that the threat will be removed. Mr Mellor now has a big say in financial affairs. His colleague as Chancellor, Norman Lamont, is also an arts lover. Indeed the new PM, or at least the PM's wife, is a great opera fan. There are enough friends in high places to stifle the idea at birth. But until it goes away the managers of the SCO, the Hallé, and every others arts administrator in the land, will sleep a little less easily.

★

Two weeks today the arts sponsorship industry will gather in unprecedented numbers at the Royal National Theatre for the annual prize giving of the Association for Business Sponsorship of the Arts. The Duchess of York will hand out awards to those companies who are judged to have contributed most to sponsorship in 1990.

This year the competition is more intense than ever. There have been over 500 entries, and many influential sponsors will feel aggrieved if they miss out on a royal handshake and some public recognition of their support. There are even dark whispers that, in these cost cutting times, sponsorship budgets might be trimmed back if a prize is not forthcoming. With media recognition of arts sponsorship so arbitrary, sponsors need something tangible to justify their expenditure.

The judges will have a hard task deciding whether biggest means best in the main corporate sponsor award. There are some major spenders seeking awards, notably Shell with its £1m a year backing for BAFTA, and the Prudential with its £500,000 arts competition. Fiat, NatWest, and British Telecom are also substantial sponsors seeking a pat on the back.

There will also be intense rivalry for the best new sponsor award. Here large companies like Nestlé, with its initiative in luring the London Mozart Players to settle in Croydon, and the Guardian Royal Exchange, which rescued the Covent Garden Festival, must compete with comparative minnows, like Edwardian Hotels, which supported the RA's exhibition of over-looked early 20th century academic art, and Arrow Oil which paid for the Horse and Bamboo Company to bring community theatre to remote parts of Ulster, travelling by horse-drawn wagon.

Guinness will hope that its financing of the European tour by the National Theatre will secure it the international award at the expense of Rank-Xerox, which took ENO to the Soviet Union. The new award for urban regeneration pitches English Estates against Citibank and BP, and for the new art prize a sculpture commission in Newport must boost the chances of British Steel. Cadbury might finally win the youth award for its annual art competition.

The prizes, reduced this year from twelve to ten, have yet to be decided by the overworked jury of seven.

If past experience is any guide they will be distributed between stalwart supporters of the arts, big new spenders, and companies who use modest sums imaginatively to bolster local, small scale, arts ventures.

★

Which company spends most on arts sponsorship? Almost certainly Fiat, with an annual global budget of approaching $50m a year. Most of this is devoted to shoring up the architectural heritage of Italy. Its first major project was the restoration of the Palazzo Grassi on the Grand Canal in Venice which cost $6m to buy in 1984 and a further $12m to transform into an art gallery. This is dwarfed by the plan to convert the company's antiquated factory at Lingotto outside Turin into a cultural centre which, in time, could absorb $250m of Fiat's money.

The company is now extending its artistic activities abroad and is currently financing the Lion of Venice exhibition at the British Museum, which runs until January 13. The winged figure, perched on its column, has welcomed ships arriving in Venice for eight centuries. As well as touring the Lion, bereft of its wings, to key capitals, Fiat has financed the research which decided that, after years of controversy, the bronze statue is Hellenic and dates to the 4th century BC.

If Fiat does increase sponsorship overseas it will hold to the line that it exercises total control over its projects. It turns aside requests for aid from financially straitened arts organisations, although it has put £500,000 the way of the Design Museum in an attempt to consolidate the link of Fiat equals Italy equals Design in the public's mind.

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★

Barclays is putting up £300,000 to sponsor the Tate Gallery's major exhibition of Constable landscapes which opens on June 13 next year. All told Barclays spends £11m a year on community activities, with the bulk going in charitable donations.

Antony Thorncroft

ARCHITECTURE

In the tradition of Adam

Colin Amery looks at the work of a latterday classicist

Robert Adam the architect bears a great name. He was not born in 1728 but in 1948. He was not educated at Edinburgh University but at the Regent Street Polytechnic. He shares with his great namesake and predecessor a period of time in Rome, but today's Mr Adam did not have the advantage of knowing, and travelling with, Clerisseau and Giovanni Battista Piranesi.

We have the opportunity to look hard at the work of today's Robert Adam, an architect working in what he calls the new classical style, at an exhibition of his work at London's Heinz Gallery, at 21, Portman Square, W.1. until December 20 (sponsored by Alfred McAlpine Construction and Redland Bricks).

But in some ways it is not enough just to look at his work because he is also something of a polemicist and his writings are well worth reading: there is an important little book published with the exhibition called *Classical Design in the Late Twentieth Century: Recent Work of Robert Adam*. It is important because it contains essays by critics anti-pathetic to any idea of classicism "in our day and age", as well as some cogent essays by Mr Adam himself.

As Robert Adam points out it, was Ruskin who said that, "it is no sign of deadness in present art that it borrows or imitates, but only if it borrows without taking interest, or if it imitates without choice."

Robert Adam believes that the classical approach to building is entirely appropriate to our present day needs. He sees no reason for architecture to abandon visual links with the past simply because technology and new building types appear to demand virginally new solutions.

In the talk that he gave to the RIBA, "Tin Gods, Technology and Contemporary Architecture", he makes two almost incontestable points: firstly, that any newly completed building is inevitably "of its time", and secondly, that technology is demand-led so why should architecture be led by technology? It takes something of a leap of faith to move from his writings to his buildings and furniture which, although they use modern materials, are all demonstrating the timeless relevance of the classical revival.

Almost the most interesting thing about the "Robert Adam of Today" exhibition is the design of the exhibition itself. The Heinz Gallery is a room in an 18th century classical London house in Portman Square.

It was fitted up in the 1960's by the architect Alan Irvine as a modern gallery. That is to say, he decided to conceal all traces of the 18th century by covering the walls and ceiling with a bongo wood box.

This box contains all the technology – lighting and showcases – neatly inserted to function well. Adam has built a little classical temple in the centre of this veneered box, which, Russian doll-like, seems to say: at the heart of things lies this classical kernel which is Architecture. Irvine made a decision to hide the classical house in the 1960's; Adam builds his classical house inside the modern house inside the classical house – reinstating the roots again.

A vigorous and sometimes rough kind of classicism

Why does his temple – which is all too obviously made of wood and paint – still speak to us of the architectural integrity of classicism? I think it is that old magic of the orders. The five orders – Doric, Ionic, Corinthian, Tuscan and Composite – remain unique and powerful. That greatest of all writers on classical architecture, Sir John Summerson, has compared the orders with chess pieces: they stand for ever, their indentities intact and their number fixed. Mysterious and miraculous, the orders have the power, when they are spaced or linked to arches, of giving proportion and meaning to architecture. In fact orders are order...

Can the architecture of Mr Adam bear the weight of all this theory? He has not yet built a great deal and, practising as he does from Winchester (his firm is called Winchester Design with a horribly unclassical logo), his work is mainly to be seen in Hampshire and Wiltshire.

It is a vigorous and sometimes apparently rough and ready kind of classicism that, to be frank, does not always come off. But he has been bold and brave. It took courage to design the headquarters of a computer company in an almost Hawkmoorian mode in a Hampshire park.

This example, at Dogmersfield, is classicism with plate glass windows; it is memorable. Breathing life into classical architecture is incredibly difficult. Lutyens did it by acknowledging how difficult, "the high game of classicism" is despite the fact that he had the gift of breathing the fire of the gods into brick and stone.

In the exhibition you can share the difficulties with Robert Adam and sense his moments of real success. His little public library at Bordon like a modest brick and tile basilica is very satisfying. It is innovative, too, in its use of terracotta decoration. You can see the terracotta capital, based on the leaves of a harts tongue fern and made by David Birch, in the gallery.

It shows the way Robert Adam is thinking about the revival of architectural decoration and ornament, and a simple and practical way using a neglected and versatile material. An important aspect of Adam's work is the seriousness with which he employs good craftsmen working in wood, stained glass and wrought iron.

The day I went to look at Adam's interesting exhibition I went on to chair a meeting of The Lutyens Trust. We were given a lecture by Mr Charles Wagner about the work he is doing tracing the complete oeuvre of Sir Edwin Lutyens which was fascinating, as Mr Wagner has made many important new discoveries and showed slides of wonderful, unknown Lutyens buildings. He also reminded us that not only was Lutyens so unbelieveably prolific, but that he made something completely original out of the timeless essences of classicism in the most modest and minor buildings. Will the embers of the current classical revival catch fire and burn with the true flame?

Travelling Opera

Travelling Opera's new production of *Don Giovanni* will complete the six operas it will take on tour next year, which opens with a two-week season at the Yvonne Arnaud Theatre Guildford with *The Marriage of Figaro* on January 14. *Don Giovanni* will open at the Swan Theatre, Stratford on March 12; the other operas on tour are *Rigoletto*, *Così fan tutte* and *The Barber of Seville*.

Mauceri gets Hollywood Bowl

John Mauceri, the American music director of Scottish Opera, has been appointed chief conductor of the newly created Hollywood Bowl Orchestra, which will perform in the outdoor concert centre, record for Phillips Classics and tour internationally.

Mr Mauceri will commute between his two musical headquarters.

"Swing Clarinets"

A tribute to the music of clarinettists Benny Goodman, Woody Herman and Artie Shaw will be paid at a December 15 concert at the Elizabeth Hall in London. Two of Britain's leading clarinet players, Randolph Colville and Dave Shepherd, will join the Ray Wordsworth Big Band in concert. Further details from Michael Webber, 19 Netherhall Gardens, London, NW3 5RL.

ARTS GUIDE

November 30-December 6

MUSIC

London

Chamber Orchestra of Europe conducted by Gennadi Rozhdestvensky perform Britten and Stravinsky. (Fri). Barbican Hall. (638 8891).
The Philharmonia conducted by Guiseppe Sinopoli play Mahler's eighth symphony. (Fri). Royal Festival Hall. (928 8800).
Daniel Barenboim plays Bach's Goldberg Variations. (4pm, Sun). Barbican Hall.
London Symphony Orchestra conducted by Mariss Jansons play Shostakovich's seventh symphony. (Sun). Barbican Hall.
Chamber Orchestra of Europe conducted by Gennadi Rozhdestvensky play Shostakovich programme. (Mon). Barbican Hall.
English Chamber Orchestra conducted by Jeffrey Tate play Beethoven. (Weds). Barbican Hall.
London Symphony Orchestra conducted by Mariss Jansons play Sibelius and Strauss. (Thurs). Barbican Hall.

Paris

Ileana Cotrubas farewell (Mon). Salle Gaveau (49530507).
English Chamber Orchestra conducted by Jeffrey Tate, Mitsuko Uchida, piano: Beethoven (Mon). Chatelet (40282840).
Quatuor Arditti, Brenda Mitchell, soprano, conducted by Andre Richard, Freiburg/Breisgau Vocal Ensemble, Brian Ferneyhough (Mon). Auditorium Chatelet (42361390).
Nikita Magaloff, piano. Chopin (Tue). Salle Pleyel (45638873).
Bastille Opéra. Season opens with Verdi's *Otello* conducted by Myung-Whun Chung with Corneliu Murgu in the title role, Renato Bruson as Iago and Kallen Esperian as Desdemona (40011616).
Quatuor Arditti, Rene Meyer Clarinette conducted by Diego Masson: Brian Ferneyhough (Tue). Auditorium Chatelet (42361390).
Nicolaeva Cycle (Tue, Thur) Salle Gaveau (49530507).
Orcahstre de Paris conducted by Semyon Bychkov, Daniel Barenboim, piano. Tchaikovsky (Wed, Thur). Salle Pleyel (45638873).
Quatuor Arcana: Dutilleux, Hersant, Messiaen (Thur). Auditorium Chatelet (42361390).
Chatelet. Broadway musical *42nd Street* to Harry Warren's music in a production supervised by Mark Bramble (40282840).

Antwerp

Royal Flanders Philharmonic conducted by John Nelson, with Gulsin Onay (piano). Rouse, Saint-Saens, Mussorgsky, Rachmaninov (Fri). Koningin Elisabethzaal.
Collegium Vocale Orchestra and Chorus conducted by Philippe Herreweghe, with Barbara Schlick (soprano), Gerard Lesne (counter-tenor), Howard Crook (tenor), Peter Kooy (bass). Bach's Cantatas No 105 and 131 and fifth cantata of the Christmas Oratorio (Thur). De Singel.

Brussels

RTBF Symphony Orchestra conducted by Robert Casteels with Jean-Claude Vanden Eynden (piano), Johan Schmidt (piano). Leduc, Gyseling, Michel, Mozart, Mendelssohn (Sat). Maison de la Radio.
La Petite Bande conducted by Sigiswald Kuijken. Bach's Brandenburg Concertos Nos 3-6 (Tues). Palais des Beaux-Arts.
Oratorio Chamber Orchestra and Chorus conducted by Dominique Jonckheere, with Marie-Paule Fayt (soprano), Els Crommen (soprano), Jean-Guy Devienne (baritone), Axel Everaert (tenor). Handel and Musset (Tue, Wed). Conservatoire Royal de Musique.

Amsterdam

Radio Philharmonic conducted by Rudolf Barshai, with David Pittman Jennings (baritone). Loeshsbin, Shostakovich. Concertgebouw (Sat matinee).
Netherlands Chamber Orchestra with Robert Holl (bass), Antoni Ros-Marba conducting. Beethoven, Bach, Schoenberg. Concertgebouw (Sat, Sun matinee).
Tokyo Quartet. Beethoven. Concertgebouw (Sat).
Netherlands Opera in a co-production with the English National Opera of Verdi's *Un Ballo in Maschera* directed by David Alden. Netherlands Philharmonic conducted by Michael Halasz, with Liuba Kazarnovskaya as Amelia and Emil Ivanov as Gustav III Muziektheater (255 455).

Utrecht

Tokyo Quartet. Beethoven. Vredenburg (Mon).
Royal Concertgebouw Orchestra conducted by Klaus Tennstedt. Schonberg, Mahler. Vredenburg (Thur).
Chicago Blues Festival. Vredenburg (Thur) (31 45 44).

Frankfurt

Katia Ricciarelli (soprano) and pianist Vincent Scalera with songs by Rossini, Verdi, Donizetti, Liszt, Ravel and Tosti (Mon). Alte Oper.
Frankfurt Radio Orchestra under Sylvain Cambreling with Frank Peter Zimmermann (violin) play works by Berlioz, Weber, Berg and Beethoven (Thur). Alte Oper.

Cologne

Tokyo String Quartet plays works by Schubert, Zemlinsky and Beethoven (Tues). Philharmonie.
Maurizio Pollini piano recital with works by Beethoven, Webern, Boulez (Thur). Philharmonie.

Berlin

Berlin Philharmonic and pianist MaurizioPollini under Claudio Abbado in Beethoven and Bruckner (Sat, Sun). Philharmonie.

Florence

Alexander Lazarev conducting Prokofiev and Tchaikovsky (Fri,Sat, Sun); Zubin Mehta conducting Brahms, Vivaldi and Bartok (Thur). Teatro Verdi (212320).

Rome

Giuseppe Grazioli conducting Brahms and Schumann (Sat-Tues). Auditorium in Via Della Conciliazione (6541044).

Madrid

Spanish National Orchestra conducted by Walter Weller. Tchaikovsky, Llacer, Brahms (Fri). Auditorio Nacional de Musica (337 01 00).
Andres Segovia Chamber Orchestra, conductor Jose R. Encinar. Garcia-Abril, Boccherini, Aracil, Haydn (Fri). Auditorio Nacional de Musica (337 01 00).

Barcelona

Orquestra Ciutat de Barcelona conducted by Bryden Thomson, with Laura Czik (piano). Elgar, Chopin, Rachmaninov (Fri, Sat, Sun). Palau de la Musica Catalana (268 10 00).

New York

Philadelphia Orchestra conducted by Christop Eschenback. Mozart, Bruckner (Tue). Carnegie Hall (247 7400).
Chamber Music Society of Lincoln Center directed by Fred Sherry. Schubert, Brahms, Mendelssohn (Tue). Alice Tully Hall, Lincoln Center (874 6770).
Eugene Istomin piano recital. Beethoven (Wed). Carnegie Hall (247 7400).
Orchestra of St. Lukes conducted by Roger Norrington. Mozart, Haydn, Beethoven (Wed). Avery Fisher Hall, Lincoln Center (874 6770).
Arioso Ensemble with Taru Valjakka (soprano). Bystrom, Sallinen, Kuula, Sibelius (Wed). Kaufmann Hall (415 5450).
New York Philharmonic conducted by Samuel Wong with Vladimir Feltsman (piano). Schnittkke, Rachmaninoff, Shostakovich (Thur). Avery Fisher Hall, Lincoln Center (874 5770).
New York Philomusica conducted by Robert Johnson. Beethoven (Thur). Merkin Hall (362 8719).

Washington

Chamber Music Society of Lincoln Center directed by Fred Sherry. Schubert, Brahms, Mendelssohn (Wed). Concert Hall, Kennedy Center (467 4600).
National Symphony conducted by John Eliot Gariner with Joshua Bell (violin). Chambrier, Schumann (Thur); Concert Hall, Kennedy Center (467 4600).

Chicago

Chicago Symphony Orchestra conducted by Erich Leinsdorf with Adolph Herseth (trumpet). Copland, Hummel, Prokofiev (Thur). Orchestra Hall (435 8122).

Alan King

DOMINION THEATRE

Alan King, the longstanding American comedian, turned up in London and Manchester at the weekend and he can certainly show a thing or two to some of the comics who appeared in *Stand Up, America!* at the Queen's Theatre over the last six weeks.

King's virtues are professionalism and the rather more surprising one of humility. Quite the most impressive part of his show at the Dominion on Saturday came at the end when he told the audience that he hoped that some way can be found of resolving the "goddammed mess" in the Middle East. He also made an appeal for contributions to World Aids Day.

King is a very Jewish entertainer, and the trouble with Jewish entertainers is that, however good they are, after about an hour or so, they do seem to be going on a bit. Some of us note that there is a world elsewhere, not wholly dominated by references to mothers, grandchildren, family and money. Still, King is up with the best of the metropolitans. He would "rather be mugged than bored to death", he notes, in a defence of London and New York as opposed to (say) California.

He also avoids the cheap, topical allusions put in only to show that the comic has seen the television news or read a newspaper headline. No mention of Saddam Hussein just for the sake of it. He said he had arrived with a load of jokes about Mrs Thatcher, but she "walked" the day he arrived, so the rest on that subject was more or less silence.

Like the comics who appeared in *Stand Up, America!*, King relies heavily on references to television, but does so in a much less parochial way. Instead of referring to the ins-and-outs of particular programmes, he treats TV as a powerful means of communication, which of course it is. If Alan King threatens to go on The Johnny Carson Show and denounce Eastern Airlines for losing his luggage on the way, then even Eastern Airlines is obliged to do something about it.

Many of his best lines are about air travel. Eastern is accused of offering him $3,000, a piece of the company and a guaranteed seat next Tuesday as an apology for overbooking. He also has a crack at Lufthansa whose crews are charged with goosestepping down the cabin "when they sometimes forget". There is, too, a touch of pathos. "Have you ever thought what would happen if a poor man turned up at a hospital claiming he was "completely exhausted"?

King had not appeared in London since 1964. It is a pity that his latest stay was so brief, for he performs with great charm and maturity.

Malcolm Rutherford

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NUMBER ONE SOUTHWARK BRIDGE, LONDON SE1 9HL
Telephone: 071-873 3000 Telex: 922186 Fax: 071-407 5700

Monday December 3 1990

Kohl's just reward

CHANCELLOR KOHL and his coalition yesterday won their expected and on the whole well-deserved victory in the new Germany. It was deserved because Mr Kohl and his coalition partners reacted better and faster to changed circumstances than the opposition Social Democrats. Even when the chancellor made mistakes – like hedging on the German-Polish border – he was quick to correct them. And when the Bundesbank sought to put financial orthodoxy above political necessity, Mr Kohl was adamant in insisting on a one-for-one exchange rate between the two German currencies. Not least, he was assisted by a remarkably prescient constitution which allowed for the accession of east Germany by the straightest possible route.

So a period in German history is over. Inevitably thoughts now turn to what happens next and to how the new Germany will use its power and influence. Germany has become the biggest democracy in Europe. It will have a crucial say in most of the international institutions, whether Nato, the European Community, the International Monetary Fund or the Gatt. Perhaps only in the United Nations does it have a voice out of proportion with its potential.

The country also has a formidable economic reputation to live up to: not only in the quality of its industrial output, but also in its economic management. It was said some years ago that if the German economy sneezed, much of the rest of Europe caught a cold. That is much more true today. Even a minor move by the Bundesbank on interest rates can have effects beyond the German borders. The German responsibility has grown greater with time.

Not insurmountable

In the short term, the efforts of the new government will go on absorbing the old East Germany into the new republic. That will cost money, but should not be an insurmountable task. The government, however, will have to state more clearly than it did before the elections how the regeneration of the east is to be paid for: by raising new taxes, cutting planned expenditure or a mixture of both.

Those domestic matters are plainly a priority. Yet Germany is too important a state to be able to immerse itself in home affairs. In recent months the country has been criticised for showing too little interest in the international efforts to remove the forces of Saddam Hussein from Kuwait. The Germans may have good reasons for their reticence, but they cannot help noticing that it does not go down too well in the United States, a country that above all helped to make Germany what it is today. Equally, the German government has not always been particularly forthcoming on how it sees the future of Nato. On the question of the basing of short-range nuclear weapons, Mr Kohl's approach has tended to be one of playing for time. Now that the elections are out of the way, it would be helpful to hear what kind of defence he wants and how far Germany is ready to play a role in an international order.

Pressing matters

There are matters of pressing international economic importance, too. The German attitude to agricultural protectionism in the current Gatt talks has rightly not escaped censure. One of Mr Kohl's first tasks this week will be to show whether he can escape from his farm lobby or whether he is content to retreat into a narrow Franco-German alliance. He should make the leap.

It would be unfair, however, to harp on the shortcomings of the man who has become Europe's most successful elected politician at the head of the continent's most thriving state. Whenever there is change in Germany, outsiders have pause for thought. Yet throughout the post-war period the country has almost always risen to the challenge. It is a force for democracy and peace as well as a motor for economic growth. Outsiders may also admire its constitutional system which, for all that Mr Kohl has done in the last year or so, has denied his party an overall majority. As for the Social Democrats, they misjudged the campaign and the mood of the country, but there is no reason why they should not gradually come back through victories in the Länder.

Causes of Soviet hunger

RECENT weeks have seen increasingly apocalyptic reports of approaching hunger, if not famine, in parts of the Soviet Union. European, including east and central European, governments, have expressed concern about the possibility of a large-scale influx of refugees. The German government has decided to donate the bulk of its Berlin stockpile. Other western countries and institutions are preparing to do likewise. Countries closest to the Soviet border are setting up facilities in case the influx arrives.

In human and political terms the desire to help the Soviet people in what is perceived as their hour of need is both understandable and commendable. It also makes sense to try to pre-empt, or reduce, any future uncontrolled influx by seeking to improve living conditions in areas which can be more easily reached from the west. There is particular emotional satisfaction for Germans in helping relieve hunger in cities like Leningrad, which was so sorely afflicted during the 900-day wartime siege and bombardment.

Yet there is little evidence that large numbers of Soviet citizens are preparing, or able, to cross the heavily guarded Soviet border in the foreseeable future. Once Soviet citizens are granted the right to hold western-style passports, as expected next year, there will certainly be an increase in applications to visit, work and emigrate to western countries. But that is quite a different issue.

It also has to be borne in mind that if parts of the Soviet Union go hungry this winter, as seems increasingly likely, it will not be because this vast country is incapable of producing enough food. On the contrary, it had a record harvest of grain this year.

Command economy

If Soviet citizens go hungry it will be partly because the distribution and transport system has broken down, this being largely a symptom of suppressed hyperinflation. Above all, neither President Gorbachev nor any other Soviet leader has been able to change the fundamentals of a system which was not designed to improve the wealth, health and happiness of the people. The function of the command economy was, instead, to raise the military strength and political influence of the state.

That is no longer the overriding aim of the Soviet government. But Mr Ivan Silyaev, the Russian prime minister, recently announced at a meeting with 280 top defence industry officials that in Russia, the largest of the 15 constituent republics, "defence industries still account for 55 per cent of all industrial production". The story is similar throughout the Soviet Union.

Wholesale destruction

Admittedly, an estimated 40 per cent of production from military plants is made up of civilian goods – from baby carriages to refrigerators. It is also true that the Soviet Union is now committed to the wholesale destruction of its arsenal of tanks, guns and aircraft stationed in eastern Europe and Russia up to the Urals.

The fact remains that the Soviet people are poor because the economy was designed to serve a military-industrial complex which, for more than 60 years, has consumed the bulk of the human and material resources of this richly endowed country. It continues to do so.

No amount of western aid will help the Soviet people until this system is dismantled. That requires a clear-cut victory for those "reformers" battling a military-industrial complex determined to retain its privileged access to resources.

Another fundamental reason for the Soviet Union's abiding poverty is the murder, under Stalin, of millions of its best farmers. He deliberately destroyed the "sturdy yeoman farmer" class created by Piotr Stolypin, pre-revolutionary Russia's last great reforming prime minister.

Soviet agriculture has never recovered from the destruction of peasant culture and re-introduction of serfdom in the shape of the collective farm. It will not recover until the grip of the collective farm and agricultural establishment is broken and full rights to land ownership restored.

Martin Dickson on the rise of an institutional shareholder movement seeking to improve the governance of leading US companies

Investors wake up to their power

MR Dale Hanson, a man with an easy smile, informal manner and relaxed mid-western drawl, seems about to provoke cries of anguish and outrage in boardrooms across America.

For Mr Hanson, who counts duck shooting among his pastimes, is preparing to take aim at a particularly fat sitting target: the pay packages of top US executives. And he carries a great deal of fire-power. As executive officer of the California Public Employees' Retirement System, more commonly known as Calpers, he runs the largest public pension fund in the US, with some $56bn in assets.

He is also at the forefront of an important new institutional shareholder activist movement which could strongly influence the way American companies are run in the 1990s. The activists, rallying round the cry of "better corporate governance", want to make professional managers more accountable to their shareholders. Over the past two to three years the fledgling movement has started challenging poorly performing companies on a range of contentious issues, notably "poison pills", a collection of devices designed to protect a business from the threat of takeover.

Now, however, the activists are moving on to much broader questions, such as executive renumeration and the composition of boards. They tend to prefer boards with a majority of non-executives and a separation of the roles of chief executive and chairman. Many executives resent the interference.

Mr Hanson, for one, stirred up controversy last January when he had the temerity to write to the board of General Motors, which was about to choose a successor to chairman Mr Roger Smith. How, he inquired, would the board evaluate the new chairman's performance and what was GM doing to maintain dialogue with its shareholders?

And only last month he provoked the wrath of the Business Roundtable, a ginger group bringing together some 200 leading US companies, by distributing a questionnaire to thousands of executives seeking their views on a variety of corporate governance issues. The aim was to identify a national pool of talent which could be supplied as outside directors to companies needing non-executive board members. This would be similar to the list kept in the UK by Pro-Ned, the Bank of England-backed group which campaigns for boardroom reform.

The activists' supporters say the prickly reaction of big business underlines the importance of the movement. The institutions, they argue, could prove an important spur to business efficiency in the 1990s, performing a similar role to that played by the threat of a takeover in the last decade.

The movement's most potent weapon is the "proxy" – proposals which have to be put to a vote of shareholders, most commonly in the company annual meeting season of late spring and early summer.

Mr Hanson says that one of subjects he will be raising in proxy contests next year is executive compensation, which "in many respects has got out of hand". There are some companies, he complains, which have been consistently poor performers but where "compensation continues to grow in leaps and bounds". He would like to see some consistency brought to the process, with board members' packages decided entirely by committees of non-executive directors.

"We expect to hear some real squeals this year," he says with relish, in an interview at Calpers' modern headquarters in the Californian state capital of Sacramento.

It has taken a long time for America's institutions to wake up to their potential power and wield it collectively. Only five years ago most shareholder proposals, other than those

launched by corporate raiders, concerned social issues and it was very rare – if not unprecedented – for a proxy opposed by management to be adopted. "Most of us on the institutional side would agree that for too many years we thought of ourselves as investors and not owners," says Mr Hanson.

Several factors have combined suddenly to change this. One is the sheer growth of institutional investment and the decline of the individual US shareholder: in 1970 pension funds owned about 9 per cent of outstanding US equities; today the figure is approaching 40 per cent.

Moreover, the nature of institutional investment has also been changing. The past few years has seen great growth in passive indexing. This means that investors do not try to pick stock market winners themselves, but merely make up a portfolio composed of the weighted constituents of market indexes, such as the Standard & Poor's 500. The rationale is cost efficiency and the fact that very few fund managers can outperform the indices over the long term. Calpers, for example, has indexed some 80 per cent of its domestic equities portfolio.

But passive indexing makes it less likely that an investor will sell the stock of a poorly performing company, and that gives the fund manager a powerful incentive to improve the group's record.

(However, Calpers is now experimenting with a new indexing technique, which allows it to target better performing companies. Mr Hanson says that if this tool works the fund would be able to walk away more easily from the "out and out dogs".)

Another factor encouraging the activists has been a whittling away of shareholder power, particularly in the field of takeovers. A landmark here was a Delaware court ruling last year over the proposed Time-Warner merger, which upheld the right of management to reject one takeover bid in favour of a lower priced deal which the board deemed better for long-term strategy.

After initially challenging poorly performing companies, the activists are moving on to much broader questions, such as executive renumeration and the composition of boards

This year has seen a rash of anti-takeover legislation at state level, most notably in Pennsylvania and Massachusetts, designed to protect local companies. Mr Hanson says these "knee-jerk reactions" are "a real dangerous thing to be having occurring, particularly as we're trying as a nation to compete in a global marketplace". He is urging the federal government to create a national corporate law which could harmonise the current mishmash.

A final factor encouraging the activists is sheer revulsion against the excesses of the 1980s, when managements paid "greenmail" to see off corporate raiders, put in place elaborate poison pills to entrench their positions or launched buy-out bids which offered them vast personal riches for relatively little effort.

The most notorious of the buy-outs was the unsuccessful offer launched for RJR Nabisco, by its high-living chief executive, Mr Ross Johnson, at a price which a subsequent frenzied bidding battle was to prove extremely cheap.

The fight for RJR – which came to be seen as a symbol of executive greed – was chronicled in the book Barbarians at the Gate, published earlier this year. Mr Hanson, who has distributed copies to all members of the Calpers board, says the book has done "more for corporate governance than anything we or any of the other activists will ever accomplish".

It was probably inevitable that Calpers should emerge as one of the leaders of the shareholder rights movement. One reason is its sheer size, another is a tradition of activism that stretches back before Mr Hanson's arrival, in 1987 from Wisconsin, where he was number two in a state retirement fund. "What we have really tried to do since 1987 is focus more on poor performers," he says.

He reckons that 1990 will go down as a watershed year for corporate governance because "shareholders learnt there is power in a proxy, but more importantly I think management – and an illustration is Lockheed – has shown that you should listen to your shareholders".

Lockheed, the poorly performing aerospace group, was forced to begin talking to its institutional shareholders after Dallas investor Mr Harold Simmons built up a 19 per cent stake and tried to take boardroom control through a proxy battle.

The institutions made clear that if the chairman, Mr Dan Tellep, wanted their backing for his slate of candidates, then he must start making changes in the way the business was run. This autumn, for example, the company watered down its anti-takeover poison pill on lines similar to those suggested by Calpers.

The Californian fund has devised a so-called "chewable pill" which it argues is a fair compromise between the interests of management and shareholders, since it gives the former breathing space in the event of a bid yet allows shareholders to accept a genuine cash offer.

Mr Hanson says Calpers prefers to talk quietly behind the scenes to companies than to take more aggressive public action. But if dialogue does not work, it can fall back not only on the proxy but, in the last resort, the threat of legal action. For example, it is currently involved in litigation with Occidental Petroleum over the use of company funds to build a museum – or "golden mausoleum", as Mr Hanson contemptuously refers to it – for the art collection of Mr Armand Hammer, the chairman.

The institutions may be about to get more muscle to fight proxy battles. The Securities and Exchange Commission is considering calls by them for changes in the voting rules which currently work against the activists, such as lack of assured access to lists of shareholders and peculiar methods of counting votes adopted by some companies.

Perhaps most important of all, the current rules forbid shareholders from canvassing more than 10 other investors, which greatly inhibits the power to take collective action. "Its silly," says Mr Hanson, when "owners can't talk to one another."

Nevertheless, he reckons that the gap between the activists and the corporate mainstream is narrowing and that the two sides are finding areas where they can work together usefully. He cites as an example the huge healthcare problems facing US businesses, where he says costs are two to three times those of some European and Japanese competitors.

Maybe, but there is still clearly a big divide between the more aggressive institutions and much of corporate America. Many executives not only resent outsiders trying to dictate to them but also complain that the institutions know far too little about the companies they have invested in, are far too short term in their thinking, and were only too happy to sell out companies with long time horizons to quick-buck corporate raiders in the 1980s.

So far as Calpers is concerned, Mr Hanson strongly denies this. He points out that, as a matter of principle, it has never invested in any of the aggressive buy-out funds and that the annual turnover in its portfolio is just 10 per cent. "The average turnover of the New York Stock Exchange in 1987 was 95 per cent," he adds, "so our 10 per cent does not strike me as short term."

Nor, he adds, do the institutions always blindly accept the first offer that comes along for a company, and he tells of the day he was telephoned with a rumour that Mr Donald Trump, the New York financier, was going to make an offer for American Airlines, one of the most successful US carriers.

"By that afternoon 10 of the major shareholders of AMR had already pretty much put a kybosh on that concept," he says. Given Mr Trump's subsequent decline and fall, this was at the least a moment of enlightened institutional self-interest.

OBSERVER

Chairman's red card

■ They say that there are only two things good company chairmen have to do well. Shake lots of hands and know when to sack the chief executive.

So what do they do with the rest of their time?

Peter Drew, who took over as chairman of Taylor Woodrow at the start of the year, has shown that the chairman's overseas trips do not have to be just a polite excuse for an all-expenses-paid foreign holiday.

With the sort of teamwork one has come to expect from Britain's premier construction company, he has painted the company's Christmas card.

It is a passable water colour of St Basil's cathedral, overlooking Red Square in Moscow, which Drew sketched on a recent business trip, in between checking up on how work was progressing on a couple of Pizza Hut restaurants his firm was building in the Soviet capital.

Until now Drew, a member of the Worshipful Company of Painter-Stainers, has been best known for thinking up Taylor Woodrow's successful St Katherine's dock development. Are there any other company chairmen out there with time on their hands and hidden talents?

Smoking gun

■ The competitors of Allianz, Europe's biggest insurance company, should take no comfort from the fact that Mr Wolfgang Schieren, who has masterminded the group's relentless overseas expansion over the last 20 years, is stepping down. His successor, the 51-year old Friedrich Schiefer, is an equally formidable character.

The pipe-smoking Schiefer is a professional manager to his fingertips.

An ex-McKinsey man – he was a partner in the US management consultancy – his outspoken, cosmopolitan style contrasts with the more relaxed, though no less decisive, approach of Schieren.

The latter first made his name outside Germany by leading the Munich-based Allianz into a contested bid for Britain's Eagle Star in the early 1980s. Although BAT Industries eventually came to its rescue, Allianz walked away with a handsome £157m profit.

Those who have met Schiefer, currently finance director, have been impressed. "He's tall, handsome, intelligent, rich and what's worse, he's a really nice guy," says one London investment analyst. He is expected to broaden Allianz's horizons as a global financial services group.

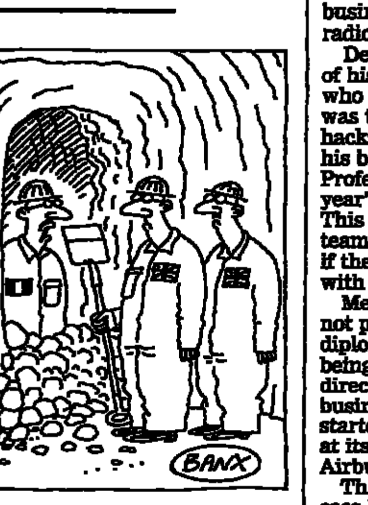
But he will also have to address growing concerns that the hectic overseas expansion – culminating in this year's $3.3bn purchase of Fireman's Fund of the US – is diluting the quality of the earnings of Germany's biggest blue-chip company.

Revolutionary

■ Prime ministers may come and go but Edward de Bono, the globe trotting lateral thinker, keeps on. As the publicity for his latest work, Handbook for the Positive Revolution, proudly proclaims, "Yellow is the colour of the revolution. It will also be the pages of what is probably the first book to be printed entirely on yellow paper."

In fact, British Telecom just nipped in ahead of Edward with the yellow pages. But what use are lists of plumbers and electricians compared with de Bono's thoughts?

After all, his last book, "I am Right, You are Wrong", "was a direct challenge to the core thinking of western civilisation and laid the groundwork for the positive revolution", according to his publicity. So now we know why Mrs Thatcher resigned.



"I was expecting more of a classless society."

The following gem from his last book is a sample of what you can expect. "Someone tells you that your accountant has defrauded you. You listen and then say 'po'. This means 'I have taken in what you have told me but I am not switching into an emotional or reaction pattern right away."

As Mr de Bono's blurb describes it, "at the core of what he says are important points." They are just hidden extremely well.

Party line

■ Will Professor Roland Smith, who has more company directorships than most, lose his nerve again and cancel for the second year running British Aerospace's traditional Christmas party, tomorrow?

Last year, it was axed because of the political storm over the Rover sweeteners. This time another political row has blown up following last week's announcement that BAe's bloated military aircraft business is to undergo some radical corporate surgery.

Despite the better judgment of his public relations team, who argued all he had to do was to give the Fleet Street hacks a drink and talk about his beloved Manchester United, Professor Smith postponed last year's binge until late January. This time his public relations team is threatening to quit if the prof does not go ahead with his yuletide merriment.

Meanwhile, the professor's not particularly well-developed diplomatic skills look like being stretched in another direction. With its military business in a slump, BAe has started to look lovingly again at its stake in the European Airbus consortium.

This was certainly not the case last year when Professor Smith, worried over BAe's exposure to the loss-making Airbus, was renowned for his constant sniping at the project and its finances.

Indeed, this resulted in at least one corporate casualty when Adam Brown, a BAe employee seconded to Airbus as the group's vice president for strategy, criticised his boss's lack of enthusiasm for the Airbus. The luckless Mr Brown was recalled from Toulouse and given a dressing down by the BAe chairman. However, I am sure that Professor Smith will be glad to hear that after taking a year off, Brown is now back in Toulouse in his old job, although no longer on the BAe payroll.

Identity crisis

■ President Gorbachev, in the midst of his current economic woes, recently told reporters that he and President Bush had a similar problem.

The Russian leader joked that Bush has 100 bodyguards. One of them may be a terrorist, but he doesn't know which.

Gorbachev has 100 economic advisers, and one of them is smart...

Stark choices in labour market

Recession is forcing many British companies to make difficult decisions on the recruitment of skilled staff and job training for young workers, writes Michael Smith

The deepening recession in British industry is starting to present managers with intractable difficulties in the handling of skilled workers. Many have long memories of the recession of a decade ago: how they slashed workforces only to be faced with severe skill shortages by the mid-1980s. They do not want to repeat the process, but they may have little choice.

The paradox facing managers is amply illustrated at the Lancashire division of British Aerospace, the defence equipment manufacturer, which last week announced plans for 5,000 job losses in its military aircraft division. BAe's north-west military operation will lose one of its three plants and 3,000 of its 15,000 workers. Yet managers will still face severe recruitment problems.

The three factories have for some time had vacancies for about 400 technical jobs in areas such as electronics, computing and avionics. Managers say the cuts are unlikely to affect significantly the need for such workers. This apparent contradiction – a dwindling number of jobs combined with an inability to recruit skilled employees – is becoming familiar to many of the people who hire Britain's workforce.

Personnel managers caught up in recession are already uncomfortably trapped between conflicting pressures. They must cut costs, and lay off workers. Yet they must also retain those workers with skills vital to complex production processes. And they must avoid the cuts leading to a sense of betrayal among the workers they have tried to motivate through employee involvement schemes and new forms of team work.

Perhaps the crucial question for companies is whether they can maintain adequate levels of investment in young workers so that when recession ends, industry is ready to pick up. The temptation to cut training is growing, partly because funds are tight and partly because unemployment has risen from its nine-year low of 1.55m in June to 1.67m in October – and perhaps to more than 2m by the end of next year.

Significant skill shortages still exist, but they are easing. According to the Confederation of British Industry, about 15 per cent of employers questioned in a survey in October suffered production losses because of skill shortages; at times last year the figure was 25 per cent. Industries which have been in recession for some time are particularly worried about training budgets and their implications for the future health of the sector.

According to the British Printing Industries Federation – which represents print companies – the number of places filled on a Youth Training Scheme it administers has fallen from 800 in 1989 to barely above 500 this year because of a lack of demand from companies. "We have been telling companies that training is not a luxury but the message sometimes seems to be falling on deaf ears," says Mr Shaun Leslie, BPIF's commercial director.

Mr Leslie says that print companies may repeat the mistakes of the last recession in cutting the workers who they will need when they want to expand output again.

The personnel manager of one small print company says he was given a training budget at the start of the year only to see it taken away by his superiors. "Training has been slashed and we have not taken on any apprentices this year. Two years ago we had half a dozen," he says.

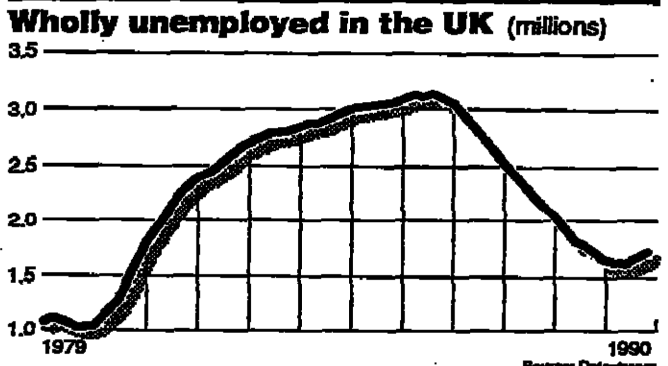
Cuts in apprentice training budgets are also a feature of a restructuring at ECC International, the china clay producer, in west Britain. It has stopped taking on apprentices in Devon and Cornwall at a time when it

The crucial question is whether companies can maintain investment in young workers

is cutting 750 of its 5,000 workers. Last year 24 apprentices began training with the company. This year there are none.

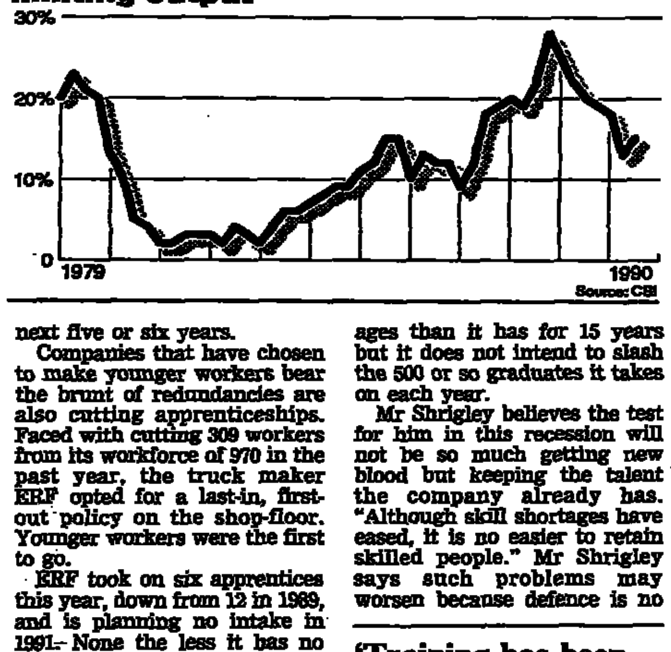
Mr Clive Gronow, operations director, says the way the company is structuring the redundancies means there is no danger of a skill shortage in the 1990s because young people are staying on. An early retirement scheme now means that fewer workers will go over the

Wholly unemployed in the UK (millions)



Source: Datastream

Companies reporting skill shortages limiting output



Source: CBI

next five or six years.

Companies that have chosen to make younger workers bear the brunt of redundancies are also cutting apprenticeships. Faced with cutting 309 workers from its workforce of 970 in the past year, the truck maker ERF opted for a last-in, first-out policy on the shop-floor. Younger workers were the first to go.

ERF took on six apprentices this year, down from 12 in 1989, and is planning no intake in 1991. None the less it has no intention of repeating what it sees as the mistake of a previous recession and making existing apprentices redundant. Mr Paul Foden, management services director, says: "After 1983 there was a lack of people coming through into skilled jobs and we had to go out into the market to get people who had been trained by other companies, like Rolls-Royce. They brought their vices with them."

Memories of an earlier recession are also fresh in the minds of managers at GEC Marconi, the defence equipment, electronics and aerospace group. Mr John Shrigley, personnel director, says the company is experiencing fewer skill shortages than it has for 15 years but it does not intend to slash the 500 or so graduates it takes on each year.

Mr Shrigley believes the test for him in this recession will not be so much getting new blood but keeping the talent the company already has. "Although skill shortages have eased, it is no easier to retain skilled people." Mr Shrigley says such problems may worsen because defence is no

'Training has been slashed. We have not taken on any apprentices this year'

longer the growth industry it was and other industries could prove more attractive: "We have to work harder to keep people."

Staff retention in a recession concerns many managers. One managing director of a Swindon engineering company says there is a danger that the lack of overtime at his company, caused by the business downturn, will tempt some employees to seek employment elsewhere. "Fortunately most other businesses are suffering from the same problem. But if it got worse for us than for others, we might consider reducing our staff and increasing the amount of overtime available to those who are left," he says.

Mr Foden, at ERF, also views his main problem as maintaining morale. "The danger is that when people are not kept busy it is sometimes difficult to get them to do the job as well as they normally would. The workforce looks for some commitment to the future and some indications from the board that plans are being laid to secure the future of the company."

Elsewhere, the recession will restrict the growth of initiatives to attract women into the workforce which sprang up over the past year or so. The provision of creches and career break schemes, aimed at helping women back into employment after taking time off to have children, could be the first to be affected. Mr Leslie of the BPIF says several print companies were considering opening nurseries a couple of years ago but none have emerged.

Some companies are still pursuing labour policies with an eye to a future in which shortages will remain. Mr John Adshead, personnel director of J. Sainsbury, the supermarket group, says staff turnover has declined significantly in the past year, down from 40 per cent to 32 per cent in the south-east because people are worried about their jobs and because of increasing unemployment.

The company is pressing ahead with nursery and child-care vouchers pilot schemes none the less. "We are trying to create an environment in which we retain staff over a long period of time," he says.

Sainsbury's willingness to stick with the innovations of the 1980s may put it in a minority of companies if the recession grows. The training and recruitment initiatives taken in the late 1980s as companies realised the problems bequeathed by short-termism in the last recession have not yet been eliminated. But they are starting to suffer, and they will become more vulnerable as the economy deteriorates.

More questions and answers on the hard Ecu

By Paul Richards

A number of questions have been raised, notably by Professor Tim Congdon (FT, November 14), about how the UK proposals for a hard Ecu managed by a European Monetary Fund fit into the three-stage process of transition to monetary union. This article answers them.

In what sense would the hard Ecu be a parallel currency?

The hard Ecu would be a parallel currency only in the sense that it would exist alongside national currencies in Stage Two. It would not be a parallel currency in the sense in which the term was used in the Delors Report:

- It would not be inflationary. On the contrary, the hard Ecu could only subtract from inflationary pressures. It could not add to them.
- It would not complicate the process of transition to monetary union. On the contrary, by promoting convergence on low inflation, it would help to create the conditions in which a viable monetary union in the Community as a whole could come about, if there was the political will to achieve it.

The UK proposals would enable the Community to gain practical experience of managing a common currency under strict counter-inflationary guidelines, before irreversible decisions were taken about replacing national currencies by a single currency. There would be no advantage in introducing a single currency to save transactions costs unless the new system was at least as counter-inflationary as the system it replaced.

How critical would legal tender status be for the hard Ecu?

Under the UK proposals, the hard Ecu could become legal tender throughout the Community during Stage Two, if member countries agreed. But the significance of this step should not be overstated:

- The critical factor for the use of a currency as money is not whether it is legal tender, but whether it is acceptable to both parties in the settlement of a transaction. Legal tender status is only relevant to transactions settled in notes and coin, and only when the means of settlement has not been agreed in advance. Many types of transaction, especially large ones, specify the currency of denomination by agreement.
- The ability of a monetary authority to set interest rates does not depend on whether its liabilities include legal tender bank notes, but whether it is regarded as the primary source of liquidity for the currency concerned, and whether its liabilities are totally free from the risk of default.

Would the EMF's solvency be in doubt?

No. The liabilities of the EMF would be backed by statutory guarantees from the national central banks which owned it. In any case, the EMF should not make a loss:

- First, each national central bank could be required to guarantee the exchange value of the EMF's holdings of its national currency against devaluation on realignments.
- Second, even if not, experience in the ERM has shown that the overall return (taking capital and income combined) on weak currencies has traditionally been greater than on strong currencies.

Would the EMF be able to control the size of its balance sheet and influence monetary conditions in hard Ecus?

Yes. The EMF would be able to control the size of its balance sheet by:

- Setting interest rates on its own hard Ecu liabilities and, in due course, by influencing hard Ecu interest rates through open market operations; and
- Presenting excess holdings of any one national currency to the relevant national central bank for payment in hard Ecus or other hard currencies. There would be pre-set limits on the amounts or proportions of each national currency that the EMF could hold.

By influencing hard Ecu interest rates, the EMF would influence monetary conditions in hard Ecu financial markets, taking account of monetary growth across the Community, among other factors.

Would the UK proposals create a grey area in the Community's monetary policy in Stage Two?

No. Decisions about national monetary policy would continue to be taken at national level. Responsibility for the hard Ecu would rest solely with the EMF, which would manage it without interference in the light of clear counter-inflation objectives. In the first case national central banks would co-operate, and in the second case they would act collectively, through the EMF.

How widely would the hard Ecu be used in Stage Two?

- First, the use of the hard Ecu could be expected to develop over time in response to market choices. The attraction of the hard Ecu to investors would be the commitment not to devalue it at realignments against their national currency. The attraction to borrowers would be the low interest rate, which should be at least as low as on the strongest national currency and probably lower, once the hard Ecu's liquidity and the EMF's credibility in the market had been established.
- Second, the hard Ecu would be more likely to be used for transactions initially by businesses and their banks at the commercial level than by individuals at the retail level. Individuals are traditionally reluctant to give up the use of their national currency, whereas businesses and banks trade across borders in different currencies all the time.
- Third, the use of the hard Ecu would be likely to grow more quickly in substitution for national currencies if market participants considered that it would one day become the Community's single currency. That would not mean that irreversible decisions about the single currency would need to be taken now.
- Fourth, the UK proposals should not be judged solely on the circulation achieved by the hard Ecu. Their objective would be to reinforce convergence on the lowest rate of inflation in the Community through the monetary discipline that they would exert on national central banks. The hard Ecu would act as a European standard.
- Finally, a decision by member governments about when to move from Stage Two to Stage Three would not depend on complete substitution of hard Ecus in place of national currencies first. But the exercise of market choices in favour of the hard Ecu would be one of the factors that member governments would take into account in deciding when the time was right to do so.

The author is a director of Samuel Montagu.

LETTERS

Legal forum shopping in the EC is to be discouraged

From Mr Elwood A. Rickless.

Sir, As an American lawyer practising in Europe for the past 30 years, I am sorry to conclude that the premises of Messrs Bishop and Carne ("EC suffering from ignorance of market for legal services", November 5) are without foundation.

There is no Europe-wide "market" for litigation services because the overwhelming number of plaintiffs in legal actions very rightly have little choice about where to bring their actions, nor should they. It is very likely that an action on contract between a Dutch and Italian firm could be resolved most cheaply in a French country town, but no one in his right mind is going to translate bundles of documents into French and trundle witnesses from Holland and Italy to, say, Nantes to sit at trial because the lawyers' hourly rates are cheaper there.

That the United Kingdom is a preferred jurisdiction for resolution of international transactions however, has little to do with the cost – which is high. It has more to do with the fact that a far larger number of transactions and disputes are conducted in the English language than in any other, and also to a justified belief that both barristers and judges in England provide a high degree of professional competence and disinterest in their dealings and deliberations.

Even so, forum shopping is to be discouraged. The cost to a national court system of hearing and deciding cases between non-residents disputing issues that have nothing to do with the forum, can be exceedingly high.

As for EC law, it is not the American lawyers who will enjoy a monopoly to pontificate in spite of pretensions of certain of our colleagues to an EC expertise. It is the European lawyers, who are directly involved in developing a body of law before the High Court in Luxembourg and relating their own national laws to those of the EC. Interesting an exercise though it may be, American lawyers are not able to enter into practical competition with European lawyers in advising on EC law.

Elwood A. Rickless,
Whitman & Ransom,
11 Waterloo Place, SW1

Scottish hubbub is the result of absurd Westminster system

From Mr Michael Turner and Mr Richard Mowbray.

Sir, As a descriptive account of the current constitutional crisis in Scotland, James Buxton's article ("The Scots who want to be alone", November 28) is unexceptionable. However, it is deficient in that it fails to diagnose the real cause of the crisis.

Buxton claims that the problems stem from "dissatisfaction in Scotland with the working of the Union", particularly "after the 1987 election when the Conservatives, left with only 10 out of the 72 Scottish parliamentary seats, imposed unpopular policies".

In our opinion, the present hubbub in Scotland is the consequence of the operation of the absurd voting system used in Westminster elections. This gives the Tories and Labour overwhelming (and false) parliamentary majorities in England and Scotland respectively – although each party has won only minority popular support (43 per cent of the votes) in its fief. The consequence is an utterly false dichotomy of a "wicked Tory England" and a "caring Labour Scotland".

As long as Westminster continues to be elected by first-past-the-post, even a Labour government in London (and certainly a Tory government) would find itself in conflict with a parliament in Edinburgh elected on the basis of proportional representation (as proposed by the Scottish Constitutional Convention).

The hard reality is that a Scottish parliament, built upon the Union, would be broken for two reasons:

First, a proportionately-elected Scottish parliament would claim greater popular legitimacy.

Second, such a parliament would be powerless on those issues which matter most to people in Scotland – unemployment and inflation.

In such circumstances, a Scottish parliament (to justify its existence) would inevitably foment discord with Westminster, seeking to blame the latter for its ineffectiveness. Naturally, the SNP would remind voters that it had always argued (correctly!) that a devolved parliament would achieve nothing. In consequence, the conditions would have been established for a popular shift towards independence – and the Union would be doomed.

But if PR were first introduced for Westminster elections, then a subsequent Scottish parliament would not impose intolerable strains on the Union. Indeed, with a fairly elected Westminster, the issue would probably become a dead duck. It is because Labour and the Tories will not pledge PR for Westminster first, that they as well as the SNP pose a threat to the United Kingdom.

Michael Turner,
Former treasurer - SDP Scotland,
Richard Mowbray,
Member, Scottish Liberal Democrats,
Monticello, Farquhar Road,
Port Glasgow

...And here is Lawson's criticism

From Mr S R Beech.

Sir, You published ("The case for a tax on credit", November 22) an argument by Iain Begg and Martin Weale for applying Vat to interest payments with mortgages, for instance, forming a possible exception.

I put the very same proposals to Nigel Lawson, the then chancellor, a little over two years ago.

His staff replied that the possibility was precluded by the EC 6th Vat Directive, and added that it was further considered distortionary, unfair, administratively complex and prone to avoidance, criticisms that I – and no doubt Begg and Weale – will find hard to accept.

S R Beech,
22, Hurst Lane, Bollington,
Macclesfield, Cheshire

Links between civil service and Number 10 are not what they seem

From Mr David Falcon.

Sir, Joe Rogaly's comments about policy formulation ("Will the real Mr Major stand up", November 28) are important, but do a disservice to civil servants.

The links to which he refers between Number 10 and the right-wing "think tanks" might have been "threads of steel", but they were certainly not exposed to the rigours, and possibly corrosive effects, of public scrutiny.

Policy formulation has suffered in the UK in recent years, with the disappearance of vehicles (for example, royal commissions) allowing public examination of facts and analyses of their consequences. Perhaps the potential change of tone in the conduct of government affairs offered by a change of prime minister will re-establish, in whatever form, such vehicles. Placing a greater reliance on the civil service for policy analysis will not be sufficient, as the process of proffering advice to ministers is likely to remain closed.

However, Joe Rogaly is unfair in casting aspersions on the quality of advice that is given – for example, does he seriously believe that the civil service would have advised that local government should in part be funded by a form of taxation that depends on knowing at all times the place of residence of every adult citizen, and be based upon a flat-rate charge regardless of income?

I very much doubt it.

David Falcon,
Director-general, Royal Institute of Public Administration, 3 Birdcage Walk, London, SW1.

FINANCIAL TIMES

Monday December 3 1990

IRAQ REVEALS NO SIGN OF COMPROMISE

Saddam sees 50-50 chance of war

By Tony Walker in Jeddah and Peter Riddell in Washington

PRESIDENT Saddam Hussein of Iraq said yesterday there is a "50-50" chance of war in the Gulf, but he gave no sign of willingness to compromise on demands that he remove his forces from Kuwait in order to avoid conflict.

In comments to French television on the US offer of a direct dialogue on the Gulf crisis, Mr Saddam said a peaceful resolution of the conflict would depend very much on whether the Americans were genuine.

"If this meeting is meant to be a true path of dialogue, then we are closer to peace," he said.

"But if this meeting is to be nothing more than a formal exhibition for the American Congress, the American people and international public opinion, then we are closer to war."

Iraq also issued a sharp rebuke to the Soviet Union over remarks made by Mr Eduard Shevardnadze, the Soviet foreign minister in which he threatened possible military intervention in the Gulf if Iraq continues to prevent Soviet nationals leaving.

A Foreign Ministry spokesman in Baghdad said yesterday that Mr Shevardnaze's threat, made in an interview with Pravda, was "aimed at finding a justification for sending troops to the region."

George Bush: contacts

The US yesterday ruled out any compromise or negotiated deal in the meetings with Iraqi leaders in Baghdad and Washington which President George Bush has suggested and which President Saddam Hussein has accepted, though with little enthusiasm , despite his frequent calls for direct talks with the US.

The reaction in Baghdad reflects concern that Iraq is being outmanoeuvred diplomatically, and that the US has been successful in firmly seizing the initiative since Thursday's Security Council resolution authorising force to liberate Kuwait unless Iraq removed its troops by January 15. Mr Dick Cheney, the US defence secretary, meanwhile said Iraq had tested Soviet-made Scud missiles yesterday which were capable of carrying chemical weapons.

Mr Cheney said in a US television interview that "it's proof again, if anybody needed it, that he does indeed have ballistic missiles".

Allied forces in the Gulf were aware of the tests and at least the British troops there were put on alert.

US military officials in the region refused to comment on stepped-up defensive activity by US forces but said they had reports on the Iraqi missile tests.

In Washington, a series of senior US officials firmly rejected Congressional calls for delay to allow more time for sanctions to work, arguing that this might risk the unity and strength of the international coalition.

Over the weekend Mr Bush contacted several other world leaders to make sure, according to one senior official, that "our coalition partners understand that this is not an opening for negotiation or an invitation to others to pursue some sort of settlement outside the UN resolutions".

Mr Bush spoke on Friday to Mr John Major, the new British prime minister. Iraq, in an official statement accepting the offer of dialogue, again sought to link the Palestine issue with the Gulf crisis, saying: "Palestine and the other occupied Arab territories remain before our eyes and at the forefront of the issues that we will discuss in any dialogue."

Mr James Baker, the US secretary of state, confirmed that within the mandate of the UN resolutions the US was prepared to talk about "all aspects of the Gulf crisis" and that this could mean a post-withdrawal discussion between Iraq and Kuwait of their differences. Moreover, he confirmed that there had "never been any suggestion that force would be used if the UN resolutions are fully complied with".

The US does not want the Gulf crisis to become tangled up with the Palestinian question. Mr Baker said that if it was raised in Baghdad he would say that Iraq did not invade Kuwait to help the Palestinians and these are two entirely different issues which should not be linked. However, Mr Bush has said that once the immediate Gulf crisis is over there should be an urgent attempt to tackle these long-term Arab/Israeli conflicts.

Final chance to save talks on world trade

By William Dullforce and Peter Montagnon in Brussels

WORLD TRADE ministers have their final chance this week to prevent the international trading system from rotting away, the head of the General Agreement on Tariffs and Trade (Gatt) said yesterday.

"I insist on the word final," Mr Arthur Dunkel told reporters, as ministers from some 100 countries arrived in the Belgian capital to conclude the four years of negotiations on the liberalisation of international trade, known as Gatt's Uruguay Round.

The talks were in a crisis, Mr Dunkel acknowledged, but they could not be prolonged. Ministers had to take the political decisions that would rescue the Round in the first two days of their scheduled five-day meeting starting today.

If there were no signs of compromise over the controversial question of EC farm subsidies the world would go on, nobody would notice any change in a week's time. But in January, after the failure of the trade talks, some traders would discover obstacles to their business, more disputes would be referred to Gatt, a lack of confidence would set in and the world economy would not get the positive signals it so badly needed.

The trading system would see "a sort of erosion, a rotting from within". What was needed was a compromise to break the stalemate over the reform of world farm trade, where the European Community's offer, limited basically to 30 per cent cuts in some internal supports for farmers, has been dismissed by the US and 14 farm-exporting nations in the Cairns Group, led by Australia, as not even forming a basis for negotiation.

Arthur Dunkel yesterday: "I insist on the word final"

Mrs Carla Hills, US Trade Representative, said that the whole Round – which aims at reaching agreements in 15 areas including trade in services and intellectual property rights – had become "badly infected" by the lack of movement on agriculture.

On reports that, after winning yesterday's general election, German chancellor Helmut Kohl might act to change the EC position on agriculture, Mrs Hills said she personally had received no such indication from the Germans. After a meeting of the Cairns Group Mr Neil Blewett, Australia's trade negotiations minister, said the agricultural issue would come to a head in 48 hours.

The Cairns Group was insisting on firm commitments from the EC to cut export subsidies and reduce protection against imports.

Community trade and farm ministers were meeting last night at an informal dinner. They were likely to discuss all outstanding issues, although there was no formal agenda, an EC spokesman said.

The dinner was billed as a general strategy-setting occasion and senior officials warned against expecting any firm decision on the farm issue.

As the political pressure built up on the EC to show flexibility over farm reform and save the trade talks, European farmer organisations were planning a massive protest against subsidy cuts.

They expect to mobilise at least 30,000 of their members to demonstrate this morning outside the reconstructed Heysel centre, where the trade ministers will open their colloquy.

Mr Dunkel said that the farmers' planned protest showed that the trade talks were firmly related to the real world. They concerned solutions to trade problems, economic growth and the creation of jobs.

Canada cautious, Page 2; Bush warned, page 6

UK stands ground over single currency

By David Buchan in Lesmo, near Milan

BRITAIN'S government yesterday signalled to its EC partners a shift in the tone, but none yet in the substance, of its opposition to a single Community currency.

Making his EC début as the new chancellor of the exchequer, Mr Norman Lamont struck his fellow finance ministers as cordial but guarded. He pressed the hard Ecu plan of his new prime minister, Mr John Major, as the best stimulus for monetary policy convergence in the EC and for creating a common and widely-used, as distinct from single, currency.

Many of Britain's EC partners expect the Major cabinet to shift the UK's position, but Mr Lamont made clear no movement would come until the Inter-governmental conference (IGC) on monetary union gets underway. He said "I have every hope the IGC can reach agreement and keep us moving forward together."

"In the immense number of issues which have to be steered through (in the IGC), there are shades of opinion (among other countries) which give us the possibility of negotiating constructively."

However, he dismissed as inaccurate an interpretation of the UK position from Mr Karl Otto Pöhl, the Bundesbank president, who yesterday said he thought Britain was arguing for its participation in the planned EuroFed central bank, without accepting the final stage of monetary union.

Mr Lamont said "we do not accept the need for the European central bank", which was the main focus of yesterday's informal meeting. EC finance ministers, however, generally endorsed the outline statute of the EuroFed, drawn up by EC central governors, led by their committee chairman, Mr Pöhl.

The bank governors had sought to translate political intentions – "the firm will of governments to go into a real economic and monetary union" – into the legal language of a treaty, Mr Pöhl said.

Left unsettled by the governors were a few points, including the say of central banks in preventing exchange rate policy moves that could jeopardise the overriding goal of price stability, he said.

Mr Henning Christophersen, for the EC Commission, warned finance ministers that growth in the Community would slow down to 2.25 per cent next year, picking up to 2.5 per cent in 1992.

Draft statutes for European bank, Page 2

Gorbachev fight to save reforms

Continued from Page 1

waned as social discord has spread. He could still return to the Soviet leadership if Mr Gorbachev's shift to the right is tactical rather than fundamental.

The Soviet leader's decree appointing workers' control committees to police the food and consumer goods distribution system is likely to be widely welcomed as a measure for tackling chronic corruption.

Yet it may well be used by entrenched Communist Party officials in the provinces to smash the fledgling co-operative sector, instead of combating endemic corruption in the state distribution system.

Telephones body to end curbs on international competition

By Hugo Dixon in London

FAR-REACHING reform of restrictive practices in the international telecommunications industry has been started by the International Telegraph and Telephone Consultative Committee (CCITT), the international telephone club.

The effect should be to reduce the price of international calls, increase competition and boost cross-border information services.

The committee's move follows the revelation earlier this year by the Financial Times that consumers throughout the world were being overcharged more than $10bn a year for international calls as a result of cartel-like practices.

Two of these practices are enshrined in the committee's recommendations: an obscure accounting rate system, used to share revenues between the telephone companies, and tight restrictions on international private circuits which are designed to keep competitors out of the market.

The committee has come under pressure from the European Commission, which has told it that its practices could be in contravention of the Treaty of Rome's anti-trust provisions.

A meeting of a committee study group in Geneva last month decided to sweep away most of the restrictions on the use of private circuits. In particular, the group decided that customers should be allowed to lease capacity in bulk and then retail it to third parties which would allow operator to compete with the established telephone companies.

Mr Theo Irmer, the committee's director, said he expected the new recommendations to come into effect late next year.

Undersea world of Channel Tunnel engineers

By Andrew Taylor in Dover

THE MAN handing out the emergency breathing equipment told us it would be sufficient for 90 minutes, long enough, he said, to escape from the world's second-longest undersea tunnel.

The safety lecture is standard procedure for visitors tothe Channel Tunnel which, after Saturday's breakthrough, now stretches all the way from Britain to France.

Above ground, Britain's newest Customs post was operating yesterday over the tunnel workings at Shakespeare Cliff between Dover and Folkestone.

All passports had to be shown to security officers before journalists were allowed into the large lift-cage which would take us 100m below the cliff-top to where a train was waiting to take us to French soil.

We were warned that Her Majesty's ever-vigilant Customs and Excise might make spot checks on our return just in case we were smuggling drugs or contraband through the newly-completed tunnel.

Our destination was 22km out from the Kent coast where, deep beneath one of the world's busiest waterways, the breakthrough between the British and French ends of the tunnel had occurred on Saturday.

At this point, under the Channel Tunnel Treaty, British soil officially becomes French territory.

The journey to the breakthrough point takes between 1½ to two hours in uncomfortable steel trucks pulled by a diesel-engined construction train.

The open doors of the carriages are covered by a thick canvas web to prevent trailing legs and arms of tunnelers, sleeping after an eight-hour shift, from being severed.

The temperature is between 70 deg F (21C) and 80 deg F (27C). At the tunnel face, when the massive digging machines are operating, the temperature can reach 90 deg F (32C).

Humidity is about 80 per cent. Small amounts of seawater still percolate through the rock in places although most of the concrete-lined tunnel is surprisingly dry.

Alongside the construction railway can be seen four large pipes and thousands of miles of electric cables. The two largest pipes are to pump out seawater in an emergency. The others carry fresh water and compressed air.

Our first stopping point is eight kilometres from the British coast, where the world's largest man-made undersea cavern has been hollowed out. It looks about the size of a small cathedral. Here, trains will be able to cross over between the two main railway tunnels.

After 16km, we are at the deepest point in the tunnel. Above us is 70m of rock and 60m of seawater. The rock at this point has to withstand a pressure of about 2,000lb per square inch.

There are a few women – including surveyors and a small number of canteen staff – among the 4,000 underground workers.

Mr Colin Kirkland, Eurotunnel's technical director, says: "Twenty-five years ago, women were not allowed underground; they were regarded as unlucky."

British workers are not allowed to bring their own food into the tunnel for fear of attracting rats. The workers are also not allowed to smoke or drink alcohol underground, unlike French tunnellers who can do both.

At 22km, we reach the breakthrough point – a narrow door through the chalk 2m high and 1m wide. At last we are in France..

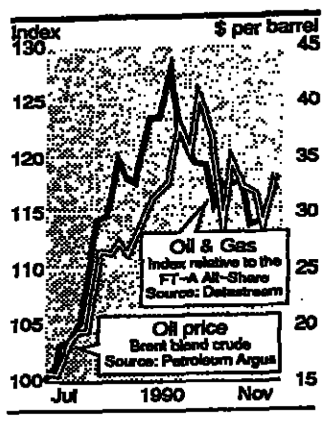
It has taken just over two hours to get there. Another hour's ride away is Calais, but that may have to wait until 1993 when the proper trains are due to start and the journey from Britain to France will take just 30 minutes.

● The world's longest undersea tunnel is the Seikan Tunnel between Japan's northern islands of Honshu and Hokkaido. It is almost 54km long and took nearly 21 years to dig. Almost 54km long, it took nearly 21 years to dig and cost $4.9bn; 3½ times the original estimated cost.

THE LEX COLUMN

Putting a price on anxiety

The behaviour of crude oil prices last Friday gave weight to the idea that the war premium of July and August has been replaced by an insurance premium which simply rises and falls in response to events. Thus, the UN Resolution 678 brought a marginal price increase amid what analysts were calling 'deadline fatigue'. When US Secretary of State James Baker's proposed mission to Bagdhad was announced, however, the price immediately dropped by $2 to under $30 per barrel. If a suitable settlement can be negotiated, the current supply balance will quickly alter and the price should move towards $20.



Nevertheless, one effect of Friday's news was to complicate the choices facing speculators. Since the outbreak of the Gulf crisis they have mainly been betting on how high prices will go, whereas they now face a much tougher call. If the market decides that everything points to lower oil prices, investors can expect a sustained period of under-performance by oil sector shares. That is why many institutions are still waiting for a brief jump in the price in the event of bad news to sell, the expectation being of a much longer-term downturn.

Meanwhile, murmurs of a further threat to supplies are filtering into the market. The worry concerns the Soviet Union, where the deteriorating domestic economy could lead to disruptions in its important oil exports. But this is probably already part of the insurance premium. For the time being, the oil market remains in precarious equilibrium.

Burmah/Foseco

Foseco's record in recent years has not inspired confidence. Its 10.7 per cent compound growth in dividends since 1985 is well below average, its earnings are declining and the City doubts whether the present management team can restore the group's fortunes. That said, the weakness in Burmah Castrol's share price since it launched its 275p per share bid seven weeks ago is a reminder that Foseco is not alone in its problems.

Having just put Castrol in its name to stress the undoubted success of its lubricants, Burmah is now trying to move further into speciality chemicals, where it has had little success to date. Unless the market collapses, it will not get Foseco on 10 times earnings. But if it has to pay much more than £3 per share, its own price will be under pressure. This could prompt others to run their slide rules over a company valued at less than 7½ times next year's earnings. The idea that hostile bids are dead is bear market bunkum, as Burmah itself has demonstrated.

Eurobonds

The sight of players in the Eurobond market acting like latter-day members of the Tory party is so familiar that it long ago ceased to raise eyebrows. The market, famous for the bitterness of its internecine struggles, has also shown a rare ability for closing ranks when outsiders interfere. It could, however, be heading for serious trouble over the sticky issue of the visibility of market prices. The debate, which started last weekend with the annual meeting of the biggest Eurobond dealers, is strictly internal for now. But it threatens to create a lasting split and could attract the attention of international regulators including the EC. It might also play an unexpected part in rationalising a market still suffering from chronic over-capacity.

If one camp, led by the newly-professionalised executive arm of the Association of International Bond Dealers, have their way, the market will become as transparent as any of the world's large securities exchanges – eventually. They say they have won the theoretical argument in advance. What evidence there is suggests that greater transparency improves investor confidence and, like better settlement, leads to higher trading volumes and therefore profits, albeit on lower margins, for intermediaries. They also have technology on their side. Extensive transaction data are already fed to the AIBD's successful trade matching system. Use of the information is strictly limited, but increasing this would be cheap and easy. How else to encourage more people to buy Eurobonds?

In the opposite corner stand the traditionalists. They think the market already functions smoothly enough. Skilled traders can use their market knowledge to place bonds or find them for investors. They make their money by taking a cut out of prices for which there are no obvious comparisons. Competition is intense, a fair price is what someone will pay, but the weak players will eventually go to the wall. In addition, as in London's equity market, it is argued that there should be one price for large trades and another for small ones, since there is no uniform client base. The feeling that the market has unique characteristics permeates the case of the die-hards who oppose even the existing reporting rules on the grounds that few of the world's securities markets are really transparent anyway.

The tension arises from the fact that the doubters are all members of the AIBD. Indeed, many of them are in powerful positions on the association's key committees. The AIBD runs the risk that if it pushes too hard and shows its hand too soon, it will cause the mass resignation of its members. In that case, any chance of greater transparency would vanish entirely.

Amersham

Amersham International, the proto-privatisation stock, remains as baffling as ever. In the past two years, its shares have halved against the market. Its earnings this year are likely to be lower than six years ago. Its dividend may not be sustainable. Nevertheless, its p/e remains in the high teens and its yield below the market average.

With last month's sale to Kodak of its Amerlite business, the group is falling back upon its traditional strengths in radio-active technology from which it was previously eager to escape. The declared task of the new chief executive is to spend the next couple of years reversing the decline in operating margins, before seeking any major increase in sales. At the same time, it will be necessary to impose a more commercial culture on a science-based company still marked by its bureaucratic origins. Although a takeover is always possible, no suitor has appeared in the two years since the golden share was abolished. Amersham is an admirable company, but its rating still looks curiously high.

WORLDWIDE WEATHER

		°C	°F
Ajaccio	S	12	54
Algiers	F	15	59
Amsterdam	C	7	45
Athens	F	14	57
Bahrain	S	24	75
Bangkok	F	28	82
Barcelona	S	10	50
Beirut	-	-	-
Belfast	C	6	43
Belgrade	F	0	32
Berlin	C	0	32
Biarritz	S	3	37
Bombay	S	33	91
Bordeaux	S	6	43
Boulogne	C	6	43
Brussels	C	6	43
Budapest	Sn	-1	30
Buenos Aires	C	23	73
Cairo	S	26	79
Cape Town	S	24	75
Caracas	C	26	79
Casablanca	S	24	75
Chicago	S	-3	27
Cologne	R	5	41
Copenhagen	C	5	41
Corfu	T	13	55
Dallas	F	9	48
Dublin	C	7	45
Dubrovnik	S	9	48
Edinburgh	C	9	48
Faro	F	14	57
Florence	S	9	48
Frankfurt	Dr	1	34
Geneva	S	3	37
Gibraltar	C	15	59
Glasgow	C	10	50
Helsinki	C	3	37
Hong Kong	S	14	57
Innsbruck	F	-1	30
Inverness	C	11	52
Islamabad	F	21	70
Istanbul	F	12	54
Jakarta	R	30	86
Jersey	C	7	45
Johannesburg	F	25	77
Lima	F	23	73
Lisbon	C	9	48
London	C	7	45
Los Angeles	S	9	48
Luxembourg	R	4	39
Madeira	F	21	70
Madrid	S	8	46
Majorca	F	12	54
Malaga	F	15	59
Malta	C	14	57
Manchester	C	5	41
Manila	C	27	81
Melbourne	C	29	84
Mexico City	C	20	68
Miami	F	23	73
Milan	S	5	41
Montreal	F	4	39
Moscow	Sn	-3	27
Munich	C	0	32
Nairobi	F	25	77
Naples	F	8	46
Nassau		-	-
New Delhi	S	23	73
New York	F	7	45
Nice	S	11	52
Nicosia	F	22	72
Oporto	S	10	50
Oslo	C	-2	28
Paris	C	6	43
Peking	S	3	37
Prague	C	1	34
Reykjavik	F	2	36
Rhodes	S	20	68
Rio de Janeiro	F	37	98
Rome	S	10	50
Salzburg	C	-1	30
San Francisco	S	6	43
Seoul	C	-2	28
Singapore	F	31	88
Stockholm	R	3	37
Strasbourg	Sn	0	32
Sydney	F	24	75
Taipei	C	18	64
Tangier	C	17	63
Tel Aviv	S	30	86
Tenerife	S	24	75
Tokyo	S	18	64
Toronto	S	1	34
Tunis	R	11	52
Valencia	S	13	55
Venice	S	7	45
Vienna	Sn	-2	28
Warsaw	F	-3	27
Washington	F	4	39
Zurich	C	-1	30

Temperatures at midday yesterday C – Cloudy Dr – Drizzle F – Fair Fg – Fog H – Hail R – Rain S – Sunny Sl – Sleet Sn – Snow T – Thunder

FINANCIAL TIMES
COMPANIES & MARKETS
Monday December 3 1990

INSIDE

Following the electric star

The privatisation of UK electricity companies is showing clear signs of being far more popular with the public than the flotation of the water industry a year ago. By the end of the weekend, banks had processed more than 600,000 applications, said Mr Cary Martin, deputy chief executive of Dewe Rogerson, marketing advisers to the British government. Only 260,000 applications had been received for water shares three days before the close of that offer. Page 20

Row within Crédit Agricole

Crédit Agricole, France's giant co-operative bank, has been torn by a row among its top management after the discovery of heavy losses on its international activities. The bank is understood to be exposed to the Goodman International in Ireland as well as to Polly Peck. Page 22

Merger move in Norway

Kvaerner group, Norway's third biggest industrial group, has approached Aker, the country's biggest privately-owned industrial company, and asked it to consider the possible benefits of a merger. Combined, the two companies would have an annual turnover of about NKr25bn ($4.3bn). Page 22

The winds of war

Companies trying to borrow money through the syndicated loan market are finding that the threat of war in the Gulf is leading bankers to include specific war clauses in loan agreements. Page 23

Gilts rise on interest hopes

The choice of Mr John Major as prime minister produced smiles in the Gilt market last week. The rally was partly caused, however, by Mr Major's economic problems: signs of a recession have convinced the market that a speedy cut in interest rates is inevitable. Page 24

Higher cost of capital

The cost of capital for banks has been rising over the last quarter. For many using variable rate notes to raise money, spreads over Libor have doubled in the past few months. Page 23

Market Statistics

Companies in this section

Pressure on Brent Walker to split top roles

By David Owen in London

THE RESTRUCTURING of the Brent Walker board will get under way this week with a question mark still hanging over Mr George Walker's dual role as the leisure group's chairman and chief executive.

This follows the company's last-gasp success in beating a midnight Friday deadline on its £102m ($199m) convertible bond issue. Executives were in City offices tidying up loose ends over a glass of Laurent-Perrier champagne until 3am.

A Brent Walker spokesman advised yesterday against "holding your breath over the splitting of the top executive roles," adding that the current priority was to appoint a new finance director and additional non-executives.

However, pressure is expected to mount from institutions keen to see Mr Walker relinquish one of his roles.

"I hope he will accept the view that it would be better, if he wishes the company to remain a plc, that he does split the roles - but it will be difficult," said one institutional investor yesterday. Interviews with four or five candidates to replace Mr Wilfred Aquilina as the group's finance director are to take place this week. Mr Aquilina will remain with the company in another capacity.

Two new non-executive directors from the upper echelons of UK-quoted companies are also expected to be appointed soon.

Mr Christopher Sporborg, vice chairman of Hambros the merchant banker, was among those approached, but he said last night that he would not be accepting, because of his membership of the Levy Board.

A third director will be nominated soon by Jefferson Smurfit, the Irish-based paper and packaging group, which – together with Mr Michael Smurfit, its chairman – invested £25m in the Brent Walker bond.

Under the refinancing deal signed just 30 minutes before the Friday deadline, £101.9m was raised – comfortably above the £99m minimum stipulated by the banks.

However, £2.23m of the total was put up by Mr Walker himself.

This, together with amounts subscribed by unspecified additional investors, plugged the gap left by one or two placees who had opted not to invest the full amount originally planned.

Mr Walker was also obliged to promise to buy £10.42m worth of the bonds at 100p in the pound should "certain of the new investors" decide to sell – effectively according them a 'put' option on their holdings.

Under the terms of the deal, Jasaro SA, a trust run for the benefit of Mr Walker's children, has replaced Birdcage Walk, Mr Walker's own principal trust company, in subscribing for £27.3m of the bonds.

Jasaro's assets include four French vineyards which, it is thought, could serve as collateral against some of the family's commitments.

Totting up all direct and indirect interests, Mr Walker and his family emerge with an interest of 27.1 per cent in the group.

He who dares does not always win

Robert Taylor on reasons for the reorganisation plans at SAS

Mr Jan Carlzon, the flamboyant chief executive of Scandinavian Airlines System (SAS), calls his company the Businessman's Airline.

In the decade since he took office in 1981, he has used that slogan – and the accompanying emphasis on service for the business traveller – to transform the fortunes of the world's ninth most profitable airline.

Now, however, he has run into problems that any businessman would recognise. He is struggling with his ambitious three-year-old plan to turn SAS into a leading global carrier. And the outlook for the airline business grows darker by the day, as oil price rises push up costs and recession bites into demand for travel.

Last week in an effort to raise productivity, Mr Carlzon announced a comprehensive reorganisation of the airline's management. Two months earlier, SAS had announced a SKr1bn ($180m) plan to cut personnel costs, after reporting a 69 per cent drop to SKr128m in its airline division's operating profits for the first six months of this year.

SAS is not alone in its problems. Like other airlines, it has fallen victim to increasing competition, soaring fuel costs and a weakening market. The group estimates its fuel bill will rise by an extra SKr500m this year because of the impact of the Gulf crisis.

The increasing liberalisation of the European airline industry is also putting a strain on SAS, which operates from one of the world's most tightly regulated markets.

"The expansion the business enjoyed in the 1980s is history," Mr Carlzon declared last week.

SAS, however, must bear some of the blame for the group's problems.

Three years ago, with much panache, Mr Carlzon announced the company's aim of transforming itself from a Scandinavian air carrier into a global travel service company, one of Europe's expected big five airline survivors in a deregulated future.

In his self-described role as "a permanent tour conductor showing people new and interesting possibilities," Mr Carlzon planned to create a network of linked co-operating airlines held together by alliances.

In two years, he built a global network: linking with Thai Airways International and All Nippon Airways in Asia; Lan-Chile and Varig Airways in Latin America; Swissair, Finnair, British Midland Airways and Austrian Airlines in Europe; and finally with Continental Airlines in the US.

These links have generally taken the form of co-operation agreements. Some also involve equity participation by SAS.

But the alliances form only part of the group's strategy. Mr Carlzon summed it up this way: "The battle for the air has to be won on the ground. In the 1980s we saw a customer in every individual. In the 1990s we see an individual in every customer."

The company hopes to double its earnings from its non-airline activities by 1991, so that they amount to half of SAS's overall profit. Early last year the group paid the Japanese Seibu-Saison group SKr3.14m for a 40 per cent stake in Intercontinental Hotels Corporation.

SAS has also continued to expand its interest in the travel industry. This year alone it has formed links with tour operators in Italy, Spain and Finland.

From the beginning, Mr Carlzon's plan involved a willingness to expand the company faster than the market itself demanded – not least by buying new aircraft.

The bill has been steep. In 1989 investments totalled SKr10bn, the highest figure in the company's history. This year SKr7bn is being invested, with another SKr5-6bn a year to come in the mid-1990s. The company has been selling off some property assets to raise part of the money for the expansion. Mr Anders Claesson, SAS's chief finance officer says: "We have built up a large financial reserve over the 1980s and we have equity capital of around SKr13bn."

Mr Claesson says that SAS intends to raise around 40 per cent of its investment needs from its own resources – especially from the sale of property – and to borrow the rest in loans and leases.

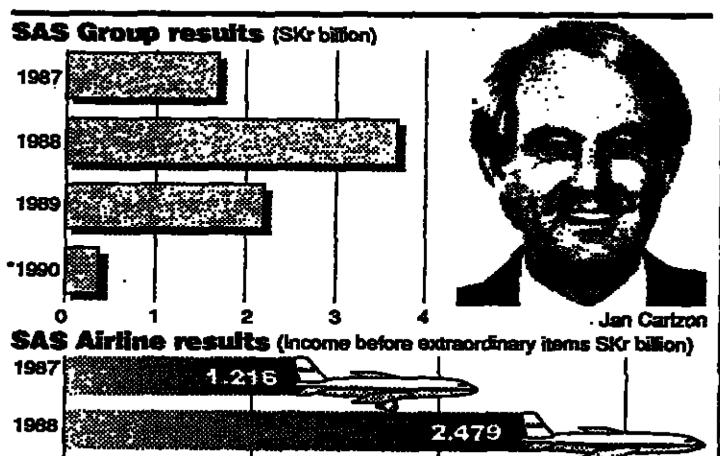
But the years of rapid expansion are at an end for the group and some of its acquisitions have posed problems. The Intercontinental hotel stake was partly responsible for a SKr114m loss at SAS's international hotels business during the first six months of this year (though Mr Claesson points out that its cost will be offset by SAS divestments). The leisure division also lost SKr63m in the first six months of this year, compared with Skr101m for the same period of 1989.

Mr Claesson says SAS is not in a crisis.

"We are taking preventive measures to avoid one," he declares. But the group is going to have to become leaner and fitter if it hopes to survive deregulation.

As Mr Carlzon likes to tell his employees: "We make a profit where we face no competition and we make losses where we face competition."

Last week he promised to be more closely involved in hands-on management of the airline. For the moment, at least, Mr Carlzon's days as global tour-conductor are over.



Jan Carlzon

Australian agency cuts debt rating of News Corporation

By Kevin Brown in Sydney

NEWS Corporation's attempts to reschedule debts of US$6.5bn were dealt a severe blow yesterday by a caustic report from Australian Ratings, the credit-watch agency.

The agency said there had been "a marked deterioration" in the condition of News Corp in the last 12 months, and warned that it was in an "extremely fragile financial position."

It downgraded News Corp's short-term debt by two points from B1 to C1. Long-term debt was downgraded from BB plus to B minus and placed on watch for a further downgrading.

The announcement follows a similar downgrading last month by Moody's, the US agency, which said News Corp's financial flexibility had been curtailed by the falling value of its media assets.

The latest downgrading is likely to put renewed pressure on News Corp's share price, which hit a low of A$4.25 on the Australian Stock Exchange recently, after standing at A$14.90 earlier this year.

The shares have recovered to trade above A$6 in recent weeks following talks between the groups bankers and Mr Rupert Murdoch, the US-based chief-executive, aimed at rescheduling much of the debt to mature in the medium term.

However, Australian Ratings was sceptical of the outcome of the complex negotiations, and warned that the rescheduling could reduce News Corp's interest cover next year to below the "thin" level of 1.3 times for 1990.

The agency said News Corp's total debt of A$13.8bn (including non-redeemable convertible notes) was unlikely to be reduced through retained cash flow because of capital expenditure commitments. Meaningful debt reduction appeared to rely on asset sales – the size and timing of which was unclear.

Rupert Murdoch: asset sales

The agency said it was "increasingly difficult to have confidence in the market value of key assets, when combined with a funding structure that is vulnerable to a change in banking attitudes." News Corp faced the probability of recessions in its main markets in the US, UK and Australia, suggesting flat revenues which would offset the benefits of lower operating costs from earlier investment.

The agency said News Corp's balance sheet incorporated "substantial intangible assets, excessive debt levels and inadequate liquidity, placing the company in an extremely fragile financial position."

Mr Murdoch said last month that the banks had been "very supportive" of the debt rescheduling proposals, but indicated that asset sales of around US$1bn would be required to repay some of the debt.

Economics Notebook

French concern over dollar's decline

Mr Pierre Bérégovoy, the French finance minister, has begun to make headway with his calls for a meeting of the Group of Seven leading industrial countries to discuss the decline of the dollar.

Yet, although preliminary talks between sherpas began in the US last week, France still appears to have full backing only from Italy for its view that the dollar has fallen far beyond any reasonable assessment of its underlying value, and far enough to cause serious long-term problems to the world economy.

In the first phase of his campaign for a G7 meeting, Mr Bérégovoy appeared to be focusing his attack on Washington. Finance ministry officials wondered whether the US Treasury had in fact tacitly adopted a policy of allowing its currency to weaken with the aim of restoring the country's trading performance.

Phase two, however, saw the minister switch his fire to Frankfurt, with an open attack on Mr Karl-Otto Pöhl, the governor of the German Bundesbank. Mr Bérégovoy complained that Mr Pöhl recognised the need for order in the European Monetary System, but apparently not in the international foreign exchange markets.

France has been irked by the Bundesbank's decision to increase its interest rates in the face of US rate cuts, thereby accentuating the dollar's decline still further.

Does the problem, then, lie with the US dollar, or with German interest rates, which are being kept high to ward off inflationary pressures and to retain capital to fund the process of unification?

The initial response from finance ministry economists is that the main difficulties stem from the undervaluation of the dollar, and its impact on the competitiveness of French exports.

Although the US accounted for only 7 per cent of French visible exports last year and 8 per cent of imports, nearly 12 per cent of exports were billed in dollars and over 15 per cent of imports.

The overall impact on France's trading position is probably greater, because of the concentration of dollar-linked trade in a number of price-sensitive product sectors such as chemicals and aircraft – Mr Henri Martre, the chairman of Aerospatiale, the French aeronautics company, has led the chorus of businessmen complaining about what he sees as an unrealistically low value for the dollar.

Mr Bérégovoy has been unwilling to commit himself to saying that the dollar's current level is too low, but officials are in no doubt that this is so.

In addition, a number of large French companies have invested heavily in the US, and their earnings flow has suffered from the dollar's decline.

German interest rates, on the other hand, pose a problem to French policy-makers less through their direct impact on the economy than through the strains they impose on the EMS exchange rate mechanism (ERM).

"There has been no realignment of the D-Mark allowed even though the "unification" shock is a real phenomenon which ought to have resulted in a rise in the D-Mark's value against all currencies, not just those outside the ERM. This rigidity and politically virile symbolism, which permeates all fixed and semi-fixed exchange rate mechanisms, is the worst aspect of the ERM," commented stockbrokers Goldman Sachs in London.

This monetary policy discord between France and Germany comes at an embarrassing moment, on the eve of the inter-governmental conference which is due to lay the foundations for European Monetary Union.

Economists in Paris do not believe the French government will press the issue to the point of breaking with Germany. French monetary policy has earned its credibility at too great a cost over the last six years to sacrifice it so soon – all the more so as it is precisely this credibility that has enabled the Bank of France not to follow the Bundesbank in tightening interest rates, and even to ease its intervention rates slightly.

All the same, the strains imposed on the ERM are real, and some French officials have in recent weeks expressed their irritation that Germany is now deciding monetary policy solely on the basis of domestic concerns, without paying even lip service to European or G7 co-operation.

The divergence between German and US policies may not, however, prove to be so unmanageable. Some French government economists are optimistic, if not yet confident, that a context of oil prices around $27 next year could dispel the threat of an inflationary spiral and usher in a downwards trend for interest rates.

"Against this background, the German problem changes nature, because it could be that German interest rates no longer need to rise, but simply not to follow world interest rates down so quickly," commented one official.

Mr Bérégovoy is, on the other hand, much closer to the German point of view when it comes to discussing the ecu. At a conference this week he declared himself in favour of a hardening of the ecu, in line with the Bundesbank proposal, which somewhat resembles the UK plan for a parallel hard ecu but without a European Monetary Fund as issuer.

"I approve totally of the idea of an ecu whose definition would be reinforced and whose use on the markets would be developed. Better accentuate the credibility of the ecu progressively than have to decree it brutally on the first day of stage three," the minister said.

His predecessor, Mr Edouard Balladur, who occupied the finance ministry during the 1986-88 Chirac government, actually beat the UK to the draw with the idea of a parallel ecu, but he believes that this is a far from urgent topic.

"Let us not put the cart before the horse. If we should have a common currency, it will in any case not be in the next eight or ten years," he commented recently.

Far more urgent, in his view, is the reform of the international monetary system. Back in 1988, when he was still in office, Mr Balladur proposed to his G7 colleagues three choices: a reinforcement of the Plaza/Louvre approach, involving publishing the exchange rate bands agreed by the G7; a global system comparable to the EMS; or a return to some form of standard, possibly a hybrid involving a basket of currencies and gold. He has now repeated this suggestion, with the emphasis on the third choice.

Mr Balladur's proposal seems unlikely to win greater acceptance among the other G7 countries now than it did in 1988. In parallel with his successor's worries over the dollar, however, his approach illuminates a longstanding French concern for exchange rate stability.

George Graham

Matsushita outlines finance for MCA deal

By Alan Friedman in New York

MATSUSHITA, the giant Japanese electronics company that on Friday began its formal tender offer for MCA, the Hollywood-based entertainment group, plans to finance around $4.8bn of the proposed takeover by means of commercial paper and bank borrowings.

The Osaka-based company said in a filing with the Securities & Exchange Commission (SEC) in the US that it expects to pay $5.8bn for MCA, which is slightly lower than the $6.1bn cash total implicit if holders of all the 92m fully-diluted common shares agree to tender.

Matsushita said in the filing it would generate $1bn for the acquisition from internal company funds.

The SEC filing also disclosed that Allen & Company, the investment bank adviser to Matsushita, will receive $8m in fees after at least 50 per cent of MCA shares are tendered.

Lazard Freres, the investment bank adviser to MCA, is expected to receive $16.75m in fees.

The Matsushita filing did not disclose the fees to be paid to Mr Michael Ovitz's Creative Artists Agency (CAA), the Hollywood talent agency that acted on Matsushita's behalf in bringing the deal to MCA. It is believed, however, that CAA will receive as much as $60m on the transaction, or a full percentage point of the takeover price.

Mr Ovitz was retained by Matsushita a year ago for advice on acquisitions, but he is not listed in the SEC filing as a formal adviser to the transaction.

COMPANIES AND FINANCE

Electricity sale produces 0.6m applications so far

By Antonia Sharpe

THE ELECTRICITY privatisation is showing clear signs of being far more popular with the public than the flotation of the water industry a year ago.

The lead receiving banks, Lloyds and National Westminster, and other banks had processed more than 600,000 applications – principally sent by post – by the end of the weekend, said Mr Cary Martin, deputy chief executive of Dewe Rogerson, marketing advisers to the government.

For comparison, only 260,000 applications had been received for water shares three days before the close of that offer.

However, there is a long way to go if the sale of the twelve electricity generating companies in England and Wales is to break the record of 4.5m public applications for shares set in the flotation of British Gas in 1986 after the controversial "Sid" advertising campaign.

Mr Martin said the electricity privatisation has appealed more to small investors than did water because it is an industry they are more familiar with. Favourable media comment has also helped. The run-up to the privatisation of the water industry, on the other hand, was marred to a certain extent by controversy over environmental issues.

The public is now quite adept in dealing with share offers. The error rate among the electricity share applications received so far is below one per cent, the same as for water, and is the lowest it has been in privatisations to date. The most common mistake is to forget to sign the cheque, and the next most frequent is a request for a number of shares which is not specified by the application bands.

Applications must be received no later than 10am on Wednesday at certain designated branches of receiving banks, and dealings are expected to commence at 2.30pm on December.

●MANWEB has been singled out as the most environmentally-conscious of the 12 regional electricity companies by the Merlin Environmental Research Unit, which supports the "green" investment management services of Jupiter Tarbutt Merlin, a member of IMRO.

The researchers said, however, that they were generally unimpressed with the level of commitment which the RECs were making towards environmental protection and energy conservation. They noted that under the current privatisation structure there was an inherent conflict of interest between the pursuit of profits and the promotion of energy conservation.


Alan Harper
John Wakeham, Energy Secretary: applicants top water sale

WH Smith adds to its US music store chain

By Maggie Urry

WH SMITH, the retail and distribution group, is paying \$23m (£11.7m) to buy 49 shops in Pennsylvania, US, which will be integrated into Wee Three, its US chain of 36 recorded music stores.

The group said it was buying the shops "on very favourable terms".

The shops, which have traded under the name Wall to Wall, were part of a 100-store chain of 100 stores which sought protection from its creditors last summer under Chapter 11 of the US bankruptcy code.

WH Smith said that it had picked the best of the 100 shops. Those which were badly sited or which did not fit well with the existing chain were refused.

It said the Wall to Wall chain's problems stemmed from over-expansion and a move to selling audio equipment and televisions instead of concentrating on recorded music.

WH Smith said that as a result of the deal, Wee Three "will achieve clear market leadership in Philadelphia, Harrisburg and East Pennsylvania." Pennsylvania". About \$3.5m will be spent upgrading the new stores by the end of the next financial year in May 1992.

WH Smith's "A" shares fell 6p to 382p on Friday.

Final meeting to decide Goodman fate

By Kieran Cooke in Dublin.

THE FATE of Goodman International, Ireland and Europe's biggest beef processor and exporter, will be decided this week as 33 banks now owed a total of more than I£500m (£459m) hold a final meeting to vote on whether or not to accept a rescue plan for the collapsed group.

Mr Peter Fitzpatrick, the Examiner appointed by the Irish High Court to assess the future viability of Goodman International, will meet representatives of all the banks involved in London on Wednesday and put forward various restructuring proposals. On December 11 Mr Fitzpatrick has to give his final assessment of the future of Goodman to the High Court.

If the banks, Mr Fitzpatrick and the Goodman company itself fail to agree on a rescue package then it is almost certain that Goodman International will go into liquidation before the end of the month.

At this stage Mr Fitzpatrick's complex restructuring plan is believed to include the sale of more than I£130m of Goodman assets and the taking up by banks of a sizeable proportion of the equity in the privately-held group.

There are further proposals for various amounts of debt to be repaid out of group profits over an extended period, and for other borrowings to be converted into long-term loans.

While many banks have said that the rescue plan offers the best solution to what has been the biggest business debacle in Ireland's history, the chances of Goodman surviving into the New Year are put at no more than 50/50 by those close to the negotiations.

Over the weekend representatives of Goodman International again called on the Irish government to come to the assistance of the group, particularly in regard to I£167m owed to Goodman by Iraq.

However, Mr Desmond O'Malley, Irish Minister for Industry and Commerce, ruled out any state help for Goodman, saying that the group's financial difficulties could not be blamed on the present Gulf crisis.

Priest defence from IM attack

By Clare Pearson

BENJAMIN PRIEST, the engineering company, has defended its record and prospects against International Marine, the Italian-backed US marine equipment group which it accused of trying to buy its shares on the cheap with a £46.6m hostile cash bid.

In a document posted to shareholders yesterday, Mr Chris Walliker, chairman, promises that interim results due this month "will be encouraging."

The purchase three years ago of Lewmar, the marine products division which IM wants to buy and then break-up the Priest group, was an "integral part of ... strategy" and not a mistake as the bidder has claimed, he says.

IM's offer of 112p per share, providing a historic exit multiple of 8.3 times earnings per share "reflects neither the premium that IM should be required to pay for the unique benefits of adding Lewmar's business to its own, nor the true value of Benjamin Priest's other businesses."

The document says Lewmar fits into Priest because it is a niche specialist engineering business with a strong market position and brand name, and it lessens dependence on sales in the UK. Products of this "prize asset" have been specified by all the competitors in the 1992 America's Cup.

It says that "Benjamin Priest is proud of its financial record." Since 1985, trading profits have risen at a compound average annual rate of 52 per cent and earnings per share at 30 per cent. Dividends have increased by at 37 per cent compound since 1986.

Mr John Grunow, IM's chairman, said "Benjamin Priest's arguments are as impoverished as its shareholders."

IM's bid is backed by £52m provided by Bedexplex, one of its shareholders which is part of Ferruzzi, the Italian group from which Mr Raul Gardini resigned earlier this week. Mr Grunow said he did not know how the changes at Ferruzzi might affect IM's ability to increase its offer "but there is nothing in this document that makes me think we would want to."

Third of Property Trust rights is taken up

By Philip Coggan

Only 33 per cent of the £18.5m rights issue of Property Trust, the USM quoted property group, was taken up by shareholders.

As the issue was not fully underwritten, that means the company has raised only £6m.

Shun Ho, the Hong Kong property group, has increased its stake in Property Trust to 29.7 per cent following the issue.

Mr Frederick Hsu, Property Trust's corporate development director, said that around half of the funds raised will be used to pay off part of the group's £18m borrowings, with the rest being retained as cash for use in investment.

Kitty Little rises to £75,000 midway

USM-quoted Kitty Little Group, which makes and markets fragrant gifts and air freshener products, lifted pre-tax profits from £53,000 to £75,000 in the six months to July 31.

Sales rose 35 per cent to £2.36m (£1.75m). Earnings advanced to 0.64p (0.36p) per share but the interim dividend is reduced to 0.25p (0.575p).

Macfarlane offshoot sold to managers

By James Buxton

MACFARLANE Group (Clansman), the Glasgow-based packaging company run by Sir Norman Macfarlane, former chairman of Guinness, is selling the division that manufactures marking products to its management for a total of £6.25m.

Macfarlane says it wants to concentrate on its core businesses of packaging and plastic mouldings. The marking division makes rubber stamps and pads, flexographic printing plates and marker pens, and made a profit of £973,000 on sales of £13m in the 1989 calendar year.

Macfarlane says the sale will eliminate the company's debt and help fund a £7m investment programme in the other divisions of the company. Sir Norman Macfarlane said that pre-tax profits for 1990 would be ahead of last year's and include an improved contribution from the main divisions.

The buy-out team is led by Mr Robert Dickson who currently runs the marking division. He and his colleagues have formed Demochange which will own the business and will be a leader in its field in the UK, as well as having facilities in Paris and Biarritz. They are paying £4.65m in cash and dividends of £1.6m, making £6.25m. Mr Dickson will resign from the Macfarlane board.

Monks Investment net assets lower

Net asset value per Monks Investment Trust share as at end October was down from 383.2p to 324.8p.

Gross investment income for six months was £8.59m (£6.98m) and pre-tax profit £5.63m (£4.09m). After tax of £1.69m (£1.15m), earnings per share were 5.07p (3.8p). The interim dividend is raised from 1.8p to 2p.

LAST WEEK'S CROSS BORDER DEALS

BIDDER/INVESTOR	TARGET	SECTOR	VALUE	COMMENT
Nomura Secs (Japan)/ IFC (multinational)/ Nat Bank of Hungary	Nomura Investment Bank Hungary (jv)	Banking	£9.1m	Japanese nibble at E Europe
Matsushita (Japan)	MCA (US)	Entertainment	£3.1bn	Cash bid; less than expected
Volkswagen (Germany)/ FAW (China)	FAW-Volkswagen Automotive Co (jv)	Car assembly	£207m	VW's second Chinese jv
Guinness (UK)	Asbach (Germany)	Drinks	£100m est	Second o'seas buy in a week
Coca-Cola (US)/Nestlé (Switzerland)	jv	Beverages	£51m	50-50 joint venture
Glaverbel (Belgium)	Sklo Union (Czechoslovakia)	Glass making	£24m	Glaverbel takes 40%
Cable & Wireless (UK)	Telecommunications of Jamaica	Telecoms	£21m	C&W ups stake to 79%
Verson International (UK)	Taylor-Winfield (US)	Engineering equipment	£8.4m	Verson focusing on US
Acorn (UK)/Apple (US)/ VLSI Logic (US)	Advanced Risc Machines (jv)	Computer chip design	£5m	46-8-46 equity split
GIAT (France)	Fabrique Nationale Herstal (Belgium)	Arms Production	N/A	Partial takeover
TriWall (Japan)		linings		Japanese tech

Source: FT Mergers & Acquisitions International

The full-scale resumption of Japanese investment in corporate America dominated the week, writes Brian Bollen.

The US\$6.1bn bid by electronics giant Matsushita for Hollywood entertainment group MCA might have been smaller than forecast, but if it weathers the expected political storm it will still be easily the biggest Japanese investment yet in a US company.

Matsushita's reputation as a cautious but brilliant copycat is enhanced by the consensus that the deal represents much better value for money than Sony's US\$3.4bn takeover of Columbia Pictures last year.

Like Sony's, this bid is driven by the perceived need to integrate hardware and software. There was a good deal of Japanese investment in Europe too, direct and indirect. Stockbroker Nomura Securities joined a tiny band of Japanese financial companies inching into eastern Europe, taking 51 per cent of a new investment bank joint venture in Hungary.

Japan's Asahi Glass controls Glaverbel, the Belgian glass maker which plans to buy 40 per cent of Czechoslovakia's SkloFlat, to give it an "important strategic presence in the expanding eastern European markets".

The purchase of 67.5 per cent of Asbach, Germany's leading premium brandy producer, was the second continental European buy announced by Guinness in less than a week.

Coming hard on the heels of the sterling 533m bid for Spanish brewer Cruzcampo, it underlines the company's international strategy.

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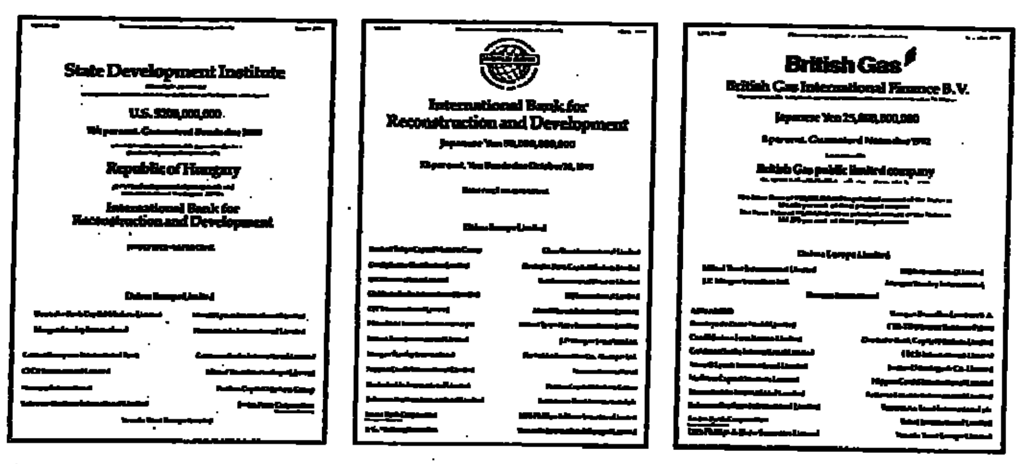

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COMPANIES AND FINANCE

Provisions check Nova Scotia bank

BANK of Nova Scotia, Canada's third largest chartered bank, has reported final net income of C$512m (US$441m) or C$2.33 a share for fiscal 1990, up from C$221.8m or C$1.01 a year earlier, writes Robert Gibbens.

But fiscal 1989 included C$800m in Third World debt provisions. Excluding this, fiscal 1990 earnings dropped 25 per cent, reflecting higher loan loss provisions and the North American recession.

Fourth-quarter profit was C$110.3m or 48 cents a share, against a loss of C$241.8m or C$1.37 a year earlier. Excluding the provisions, fourth-quarter earnings dipped 8.4 per cent.

BNS has provided for 67.4 per cent of its Third World debt exposure. Net non-performing loans were C$1.2bn at October 31, up from C$400m.

Storm at Crédit Agricole after heavy losses found

By George Graham in Paris

CREDIT AGRICOLE, France's big co-operative bank, has been torn by a row among its top management after the discovery of heavy losses on its international activities.

The Caisse Nationale du Crédit Agricole (CNCA), the central organisation for 89 regional co-operative agricultural banks, said it would make provisions of about FFr1.5bn ($300m) after an audit uncovered severe international corporate and property loan losses, mostly in the UK and Ireland.

The French bank is understood to be exposed to the Irish beef processing group Goodman International, where an examiner (similar to an administrator) has been appointed, and to Polly Peck, similarly under administration.

But a row over how to reorganise the group's international activities led on Friday to the sacking of Miss Monique Bourven, the group's deputy chief executive.

Crédit Agricole said Miss Bourven favoured a rapid development of the bank's international business, while Mr Philippe Jaffré, the chief executive, decided on a slow-down to focus on the most profitable sectors.

Other Paris bankers, however, said the row stemmed from other causes, including the recent nomination of Mr Elie Vannier, a former television journalist with no previous banking experience, to head Crédit Agricole's capital markets division, formerly Miss Bourven's department.

Miss Bourven's sacking has stirred revolt among employees at Crédit Agricole, which has always suffered from tensions between the regional co-operatives, the CNCA and the state, which until 1988 owned the CNCA.

Although Mr Jaffré was appointed after the sale of the CNCA by the state to the co-operatives bankers say he is still regarded by many Crédit Agricole employees as a representative of the Finance Ministry, where he was a senior official until 1988.

Miss Bourven has spent her career until now at Crédit Agricole. She rose through the bank's fund management and capital markets divisions, only taking over responsibility for the international division in June.

Cuts warning at Christiania

CHRISTIANIA, Norway's second biggest bank, has warned employees in an internal communiqué that it will be necessary to increase cost-cutting measures further than earlier planned, writes Karen Fossli.

The bank suffered a net loss of NKr123m ($21.2m) in the first eight months of this year and subsequently saw a further deterioration in the ability of some of its leading commercial and private sector engagements to repay their debts, forcing additional credit write-offs.

On January 4 employees are to be told of the bank's plans for further rationalisation which may mean an additional 500 redundancies.

Christiania has been hit by falling share prices in Norway and depressed net interest income due to non-performing loans and higher interest rates.

Kvaerner asks Aker to study benefits of merger

By Karen Fossli in Oslo

AKER, Norway's biggest private industrial company, has been approached by Kvaerner, Norway's third biggest industrial company, to consider possible benefits of a merger, according to Mr Gerhard Heiberg, Aker president.

Combined, the two companies would have a yearly turnover of about NKr25bn ($4.3bn) and a staff of 25,000. In 1989 Aker had a turnover of NKr14.6bn and has a market value of NKr4.2bn. Kvaerner last year had turnover of NKr9.5bn and has a market capitalisation of NKr7bn.

Both Mr Heiberg and Mr Erik Toenseth, president of Kvaerner, deny that their companies are in merger talks or negotiations. Both companies have established formidable large businesses in deliveries to the offshore petroleum sector. Aker has yearly sales of NKr6.5bn in the offshore sector, Kvaerner about NKr4bn.

This year Aker has been consolidating its business activities to return to core businesses of cement and building materials and offshore oil and gas contracting.

Kvaerner's advances come at an inconvenient time for Aker, as it is seeking to improve its finances and strengthen its presence outside Norway.

Mr Heiberg said Aker had engaged a consultant to identify future strategic options. A report is expected by December 19, when Aker's next regular board meeting will be held.

Last month Norway's minority Labour government announced its intention to repeal the discretionary clauses of the so-called concessionary laws which safeguard the country's industry, fisheries and financial institutions from foreign ownership.

This is meant to be undertaken ahead of the "European Economic Area" agreement between the European Community and the European Free Trade Association, of which Norway is a member, but has prompted a domestic debate over how to create a basis for Norwegian ownership of its companies.

Airlines' share swap explained

SINGAPORE Airlines and Swissair yesterday announced details of a share swap plan as part of an alliance formed between them and Delta Airlines last December, Reuter reports.

Under the plan, Swissair will have a 0.62 per cent stake in SIA's enlarged capital and SIA will get a 2.77 per cent stake in Swissair. Each airline may buy additional shares in each other up to a maximum of 5 per cent.

The latest swap deal completes the trilateral purchase of equity among the three alliance partners.

Delta is understood to be nearing completion this week of an agreement to buy certain Continental Airlines assets. Delta told its pilots' association several days ago that it was in talks with Continental for some of its Pacific operations, the pilots' group said.

● Lufthansa Service (LSG), the German airline's catering arm, has withdrawn its offer to buy a majority stake in Olympic Catering, the meals subsidiary of Olympic Airways, after "reassessing the financial conditions" of the purchase, writes Kerin Hope.

LSG is understood to have offered Dr6.5bn ($43m) for 66 per cent of Olympic Catering. Olympic Airways, the Greek state carrier, was to retain the other 34 per cent. The sale would have been the first to be completed under Greece's ambitious privatisation programme.

Keating assets to be liquidated

A FEDERAL judge in Arizona said he would approve a plan to liquidate the assets of Mr Charles Keating's American Continental Corporation, writes Alan Friedman.

American Continental is the former parent of the defunct Lincoln Savings & Loan, the savings bank at the centre of alleged bribery charges against five US senators.

The plan calls for American Continental's assets to be liquidated over three years to provide partial payment to the company's 25,000 creditors, who are owed $365m.

The Phoenix-based American Continental filed for Chapter 11 protection from its creditors in April 1989, in response to a request from federal savings and loan regulators.

Lincoln's failure is expected to cost taxpayers about $2bn. Mr Keating has opposed the liquidation plan.

Continental still opposed to Pirelli terms for link

By Andrew Fisher in Frankfurt

CONTINENTAL, the German tyre manufacturer, remains opposed to the terms of the merger offer from Pirelli of Italy and regards the weakening of the world economic situation as a bad time for the two companies to combine, Mr Horst Urban, Continental's chief executive, said.

While continuing to keep the door open for further talks and proposals, he stated: "We do not need Pirelli to stay alive." The German company had expanded rapidly in the 1980s and intended to grow further, especially in the Far East and eastern Europe, where an alliance with Pirelli would not bring any advantages.

Mr Urban said the "desktop evaluation" of the financial worth of the two companies, proposed by Continental as a basis for further talks, should be completed by Christmas. He could not say what might happen then. But he repeated that apart from objecting to the financial terms of Pirelli's merger proposal, Continental also disliked its insistence on management control.

"Continental has no intention of becoming a Pirelli company," he said. He added that a merger would also lead to a 3 or 4 per cent loss of combined market share in Europe, since motor companies were reluctant to buy too much from one supplier.

He said the terms offered by Pirelli might have looked better before the world started moving into recession. Although they might contain strategic and cost advantages, these were by no means as large as Pirelli claimed. Under the Pirelli deal, Continental would acquire the tyre business held through Pirelli Tyre Holdings (PTH) for DM2bn ($1.3bn).

Despite the tyre industry crisis, Continental was still in better shape than many of its rivals. Earnings would be just under 1 per cent of turnover of around DM9.5bn this year, or "at least halved". This would put them at less than DM100m against DM201m last year (excluding the effect of changed depreciation treatment).

GIAT to buy German group

GIAT Industries of France is to buy Heckler & Koch, the German arms group which makes the G3 rifle used by Germany's armed forces, for an undisclosed sum, Reuter reports.

Heckler has faced mounting financial problems in recent years due to soaring development costs in the defence industry. Heckler said the takeover still needed the approval of French and German anti-trust authorities.

On Friday GIAT also announced the takeover of Fabrique Nationale Herstal, the Belgian arms maker.

GIAT said it was also attracted by Heckler's civilian production, which comprises about half the annual turnover of about DM300m ($200m).

Chief of Strauss Turnbull resigns

MR PETER Hogarth has resigned as chief executive of Société Générale Strauss Turnbull Securities, the London-based broker, after 2½ years, writes Tracy Corrigan.

The position will be filled by Mr Patrick Pagni, currently deputy chief executive.

Mr Hogarth presided over SGSTS's transition from private ownership to majority ownership by Société Générale, the French bank. He will remain with the company to oversee the management of its settlement and clearing sub-group.

EUROMARKET TURNOVER ($m)

Primary Market

	Straights	Conv	FRN	Other
US$	325.5	0.0	328.3	11,028.4
Prev	752.0	0.0	150.0	12,558.5
Other	3,045.8	1.4	456.0	7,713.7
Prev	2,604.0	395.7	200.0	4,371.9

Secondary Market

US$	18,312.9	609.1	6,677.1	8,461.0
Prev	17,844.6	723.4	4,612.8	6,667.5
Other	26,717.9	1,176.5	8,893.0	55,500.1
Prev	24,195.8	1,924.3	7,844.7	29,720.4

	Cedel	Euroclear	Total
US$	16,812.0	28,930.3	45,742.3
Prev	14,309.5	28,996.3	43,305.8
Other	40,270.3	63,234.1	103,504.4
Prev	25,785.9	45,470.9	71,256.8

Week to November 29, 1990

Source: AIBD

Takeover downturn steepens

By Nikki Tait in New York

THE PLUNGE in US takeover activity, which has provoked sizeable job cuts on Wall Street, is becoming more marked as 1990 wears on.

Latest figures from Securities Data show that US merger activity tumbled by a further 22 per cent between October and November, despite Matsushita's multi-billion dollar acquisition of the Hollywood-based MCA entertainment group last month.

The group calculates that the value of deals announced last month was just $9.4bn, compared with $12bn-worth in October. There was a slide to 325 transactions from 357.

US takeover activity in the first 11 months of 1990 is now running at only half last year's level. In the first 11 months of 1989, there were 4,347 deals announced with a value of $360bn, compared with 4,127 transactions worth $178.7bn in the same period of 1990.

Moreover, most investment bankers are predicting an even drearier end to the year, with the possibility of war in the Gulf, recessionary forces, and the problems faced by the US and Japanese banking communities – including the pressure on US banks to get their year-end capital ratios into the best possible shape.

The latest figures demonstrate the continued importance of divestitures, in some cases sparked by parent companies' efforts to reduce debt. These totalled $79.6bn during November – and accounted for 44 per cent of the overall deal volume. In November 1989, the value of divestitures was $126.5bn, but only about one third of the total.

Worldwide, the livelier mergers and acquisitions market in continental Europe and privatisation work boost the figures. Even so, Securities Data calculates that global activity fell 10 per cent between October and November, to $27.2bn. For the first 11 months of the year, the figure is down by 33 per cent on the 1990 figure, at $404.6bn.

INTERNATIONAL CAPITAL MARKETS

SYNDICATED LOANS

Banks plan get-outs in event of Gulf war

BANKERS are becoming so anxious that there may be a war in the Gulf that they are often including specific war clauses in loan agreements before pricing them.

The United Nations resolution last week to sanction the use of force if Iraq does not pull out of Kuwait by January 15 has heightened their concern.

At the very least, banks that are bidding on deals will tighten up the wording of existing clauses that give them a get-out if there are material adverse changes in market conditions.

"Anything we have quoted a price on now, will have to be revisited in the event of a war," one banker said last week.

"There may be no market at any price."

Banks are bidding on deals that will be launched in the first two months of the new year. Although many are still keen to lend money to keep their fees coming in, they are bidding only with the right provisos and for deals which carry an adequate return.

Many provisos that are included in existing loans are loosely worded clauses which give the banks a right to change pricing and conditions of a deal if there is a significant change in the market. Banks are making these more specific.

In addition, the pricing on deals is being held for much shorter periods. In the past, offers would remain on the table for three to four weeks, but banks are now reluctant to hold a price for longer than five days.

In these uncertain conditions, much financing is done by the less public route whereby a group of banks form a club to provide funds for a company that may have liquidity problems, or may just want to keep the details of a loan secret until it has been arranged.

Olympia & York Canary Wharf, the London arm of the large Canadian property company, achieved the first part of a refinancing of its Docklands project by the club route.

The £500m-deal, which has been in the market since July, was completed with a group of 10 banks last week.

The company managed to achieve fairly competitive terms for the project finance which paid an interest rate of ⅝ over the London interbank offered rate, rising to ¾ in the last two years of the five-year deal.

The financing was tough to put in place, according to banks close to the deal, since the 10m sq ft of office space at Canary Wharf is only partially let. But O&Y was willing to work closely with the banks and change the terms of the loan if need be.

The company is now seeking a second refinancing for the project.

Its funding requirement totals £600m over 10 years, but the company is likely to have to pay a higher interest margin since prices have risen in the market since its first loan.

Syndication of the two loans for the electricity generating companies closed last week and PowerGen is due to sign its deal on Thursday. Both loans were slightly over-subscribed by large groups of banks: there are 73 in the National Power deal and 50 in PowerGen.

With the funding for the UK electricity industry in place banks are turning their attention to Scotland, where Scottish Power and Hydro Electric are due to be privatised next year. The two companies are expected to approach the loans market for £300m-£400m each in early January.

The successful syndication of the loans for the electricity generating companies shows that banks will still get involved in deals if they offer a good return.

In fact, the acquisition funding being arranged for Northern Telecom has attracted more demand than initially expected and the deal is over-subscribed at the sub-underwriting level. Now that it is going to general syndication, some banks are frustrated at seeing their commitments cut.

The Northern Telecom loan shows how some banks are so keen to sell deals in difficult market conditions that they can often end up over-selling them.

Deborah Hargreaves

INTERNATIONAL BONDS

The fall-back that investors do their utmost to avoid

THE EVENTS of the last week have cast a shadow over the youthful market in variable rate notes. Three issues from leading banks have reverted to "fall-back" interest rates, rendering them highly illiquid in the hands of a key group of investors who bought the paper on the basis of its liquidity.

Banks have been searching for a ready source of floating rate capital since the perpetual floating rate note market collapsed into a state of intractable illiquidity in 1987. The variable rate note structure appeared to offer a solution to the problem, by offering synthetic liquidity via a quarterly remarketing process.

The basis of this synthetic liquidity is an investor put option, which operates at each quarterly "remarketing period" – when the interest margin is set by the issuer and the remarketing agent, in consultation with investors.

Under normal circumstances, investors dissatisfied with the new margin can put the bonds back to the remarketing agent. While the remarketing process is operating correctly, holders of VRNs can choose either to roll-over their investment or redeem the paper every three months.

Promoters of the VRN structure have emphasised this liquidity in sales documents. A recent Salomon Brothers research note commented that the chances of market disruption in the short to medium-term "must be viewed as remote".

However, the put option ceases to operate when the instrument reverts to the fall-back rate.

Hence buyers of the $1.4bn of VRNs now at the fall-back rate are left holding illiquid instruments, having bought the paper on the basis of its liquidity.

This is particularly painful for investors which are not natural long-term holders of paper. Many VRNs were sold to corporate treasurers who bought the paper to manage short-term liquidity, in the manner of commercial paper.

According to figures from Salomon, corporate treasurers are the biggest single category of buyers of some VRN issues. Thus 33 per cent of Bank of Ireland's $300m VRN issue, now at the fall-back margin of 100 basis points, is held by Japanese and European corporations.

Similarly, 28 per cent of National Westminster's $500m issue is held by companies, although this issue has yet to hit its fall-back margin of 80 basis points over the London interbank offered rate.

These key buyers of short-term liquid paper may now be unenthusiastic about investing in VRNs.

None of the banks in the spotlight last week – National Westminster, Bank of Ireland and National Australia – faces a serious problem of credit quality. But the episode does highlight how the cost of capital for banks has climbed in the past quarter.

For example, National Australia Bank launched its £150m VRN just four months ago at a spread of 35 basis points over Libor. Today it appears that investors are demanding a return in excess of the 65 basis point fall-back rate.

Not all VRNs have reverted to the fall-back margin. Those that have done so were priced on a particularly tight fall-back margin.

This offers a clue to the true cost of such capital for a borrower such as National Westminster. Thus NatWest's senior dated VRNs cost the ban between the 37.5 basis points fall-back margin now in operation on its $500m issue and 60 basis points – the fall back margin on a still-liquid NatWest VRN deal.

It is a measure of the speed with which margins have widened that National Westminster's last comparable VRN was launched only in October, at a margin of just 18.75 basis points over Libor.

The problem for the banks in question is not overwhelming in the short term. The fall-back rate protects them from any further widening of margins, and fall-back margins of even 100 basis points are not crippling.

In the longer term any weakness in the VRN market would rob the banks of a valuable source of capital.

However, the increased cost of bank capital is not restricted to the VRN instrument. The yield on straight bonds issued by banks have increased equally over the past three months. For example, Long Term Credit Bank of Japan's $150m issue maturing 1996 was trading at a steady 75 basis points over US Treasury paper last year, gradually widening to 80 basis points by August this year. Since then, the paper has moved out to 110 basis points over treasuries.

On a swapped basis, for rough comparison with VRN margins, banks such as LTCB were paying about 5 basis points below Libor a year ago, against 25 basis points over Libor at current levels.

Banks which face specific credit quality questions have suffered even more. For example, the spread on Standard Chartered's sterling 12⅞ per cent convertible loan stock issue has widened from 310 basis points to 600 basis points in three months.

Moreover, the problem is unlikely to go away. In the latest edition of Standard & Poor's CreditWeek, the US ratings agency predicts that: "Banks are likely to experience a continued steady, and in some cases, dramatic weakening of credit quality exacerbated by lower lending margins and continuing high interest rates."

Simon London

NEW INTERNATIONAL BOND ISSUES

Borrowers	Amount m.	Maturity	Av. life years	Coupon %	Price	Book runner	Offer yield %
US DOLLARS							
Maeda Corp♦◆	200	1994	4	4½	100	Daiwa Europe	4.500
Nippon Air Brake Co.♦◆	100	1994	4	4½	100	Yamaichi Int.	4.500
Yokohama Rubber♦	150	1994	4	(4⅞)	100	Yamaichi Int.	-
Daiichi Chuo K'Kaisha♦	110	1994	4	(4⅞)	100	Daiwa Europe	-
Towa Real Estate♦	100	1994	4	(4⅞)	100	Nomura Int.	-
Komatsu Ltd♦	400	1994	4	(4⅞)	100	Nomura Int.	-
EIB(n)◆	300	1997	7	9¼	101.88	Goldman Sachs	8.878
Sanshin Electronics♦	50	1994	4	(5¼)	100	Daiwa Europe	-
Century Leasing◆	30	1995	5	8.65	101⅝	DKB Int.	8.207
Tokyo Leasing◆	30	1995	5	8.65	101⅝	DKB Int.	8.207
Itoki Kosakusho♦◆	100	1994	4	4½	100	Nomura Int.	4.500
Japan Leasing Corp(u)★★†◆	50	1995	5	(u)	100	Cosmo Secs.	-
CANADIAN DOLLARS							
Postipankki(b)◆	120	1995	5	(b)	101⅝	Yamaichi Int.	-
AUSTRALIAN DOLLARS							
St.Elec.Com.Victoria(o)◆	(o)	(o)	(o)	zero	(o)	Samuel Montagu	(o)
NEW ZEALAND DOLLARS							
Toronto Dom.(Aust.)◆	50	1993	2	14	101.95	Hambros	12.834
STERLING							
Alliance & Leicester(t)◆	75	1996	5⅓	11¼	98¼	BZW	11.673
ECUs							
Cr.Foncier de France(h)◆	125	1996	5½	9	96.70	CCF	9.778
Toyota Motor Cr.Corp(s)◆	60	1994	3½	10⅝	102.995	Paribas Capital Mkts.	9.537
D-MARKS							
African Devt.Bank◆	200	1995	5	9	100¾	Deutsche Bank	8.808
Int'fin.Cr.Nat.NV.(d)◆	150	1995	4.167	(d)	101¾	Daiwa Europe GmbH	-
Tada Corporation Co.♦	50	1994	4	(5¼)	100	Commerzbank	-
Gastec Service♦	45	1994	4	(5¼)	100	Nomura Europe GmbH	-
SCA Capital Corp BV(k)†◆	200	1993	3	(k)	100¼	WestLB	-
PESETAS							
Euro.Coal & Steel Comm.(l)◆	15bn	1995	5	13½	101.70	Banesto	13.016
SWISS FRANCS							
KDK Corp(a)★★§◆	50	1995	-	6	100	Nikko (Switz) Fin	6.000
Daito Trust Const.(e)★★§	200	1995	-	6	100	Nomura Bk (Switz)	6.088
Lan'kredbk.B.Wue'brg★★◆	75	1994	-	7½	101⅝	Credit Suisse	7.020
Paltac Corp(g)★★§	30	1995	-	6	100	Wirtschafts & Privatbk.	6.090
Lihit Ind.(f)★★♦	20	1995	-	5⅛	100	BSI	5.125
Province of Quebec★★◆	200	1996	-	7¾	101½	SBC	7.381
Isetan Co.★★◆	50	1995	-	8⅛	100	Mitsubishi Bk (Switz)	8.125
Ginza Yam'taya Co.(m)★★§	30	1995	-	6	100	Nomura Bk (Switz)	5.991
DSL★★◆	20	1995	-	7½	101½	Credit Suisse	7.057
Aegon NV◆	100	1996	-	7½	101½	SBC	7.133
World Bank★★◆	100	1998	-	7½	102	Bque.Paribas (Suisse)	7.127
KFW Int.Fin.★★◆	100	1996	-	7½	101⅝	Deutsche Bk (Suisse)	7.103
Shinobu Foods(q)★★♦	45	1994	-	5⅛	100	Nomura Bk (Switz)	5.125
Ford Motor Credit◆	125	1996	-	8	102	UBS	7.506
YEN							
Monte Dei Paschi(i)◆	10bn	1992	2	8	101⅛	Sanwa Int.	7.375
Unibank A/S(c)†◆	(c)	(c)	(c)	(c)	100.10	Nippon Credit Int.	-
Canadian Imp.Bk Comm.(p)◆	2.2bn	1991	1	13	101⅛	New Japan Secs.	11.743
Sumitomo Chemical◆	15bn	1995	4¼	7.9	101.575	Nomura Int.	7.439
In'finance Cr.Nat.NV(r)†◆	2.7bn	2001	10¼	(r)	102	Mitsubishi Finance	-
LUXEMBOURG FRANCS							
Okobank★★◆	800	1994	4	10	101.95	Kredietbk.(Lux.)	9.227
University of Montreal(j)◆	1bn	1996	5	9⅞	101.95	BIL	9.447
CCF★★◆	500	1996	5.167	9⅞	101⅝	BCEE	9.435
Ceca(j)◆	1bn	1996	6	9¾	102	BGL	9.300
LIRE							
Credit Lyonnais◆	150bn	1994	4	13⅛	101.65	Banco Di Roma	12.575

★★Private placement. §Convertible. ♦With equity warrants. †Floating rate note. ◆Variable rate note. ◆Final terms. a) Put option 31/3/93 at 107% to yield 8.002%, conversion premium fixed at 2.5%. b) Coupon pays initially, 29½% until 13/3/91, then steps down to 9.05% payable semi-annually, thereafter. c) Deal launched in four tranches, tranche A Y1.4bn, maturity 24/12/91; B Y1.6bn, 23/3/92; C Y2.7bn, 22/6/92; D Y2bn, 22/6/94. First coupon pays 3-month Libor + 36bp, then 3-month Libor + 70bp thereafter. d) Coupon pays 17¼% on 27/2/91, then 8% semi-annually thereafter. e) Put option 31/3/93 at 107⅜% to yield 8.982%. Coupon payable semi-annually. f) Callable 20/6/92 at 101¾% decreasing by ¼% semi-annually. g) Put option 31/3/93 at 107⅜% to yield 9.009%. Coupon payable semi-annually. h) Fully fungible with existing Ecu150mn deal launched July 1989. i) Short first and second coupon; 15/3/91 and 14/12/91. j) Euro-flux issue. Non-callable. k) Coupon pays 6-month Libor + ⅜%. Non-callable. l) Matador issue. Non-callable. m) Put option on 31/3/93 at 107⅜% to yield 9.109%. n) Fungible with existing $300mn deal launched October. Non-callable. o) Three Tranches: A $100mn, maturity 2001, issue price 31.10%, yield 12.389; B $200mn, 2006, 17.65%, 12.258; C $200mn, 2011, 10.50%, 11.928. p) Nikkei-linked. Non-callable. q) Callable 27/12/92 at 102% decreasing ½%. r) Coupon pays 3-month Libor + ⅛% for first 3 months, then 7¼% thereafter. s) Fungible with existing Ecu225mn deal. Non-callable. t) Fungible with existing £125mn deal. Non-callable. u) Coupon pays 6-month Libor + 30bp. Non-callable. Note: Yields calculated on AIBD basis.

INTERNATIONAL CAPITAL MARKETS

UK GILTS

Clouds recede as Major takes over

SUDDENLY investors in gilt-edged securities are smiling. In the past two weeks, UK government bonds have leapt out of a lack-lustre period, with prices moving smartly upwards.

The price movement has been driven by a rush of speculation about interest rate cuts and hopes in the market of a more stable UK political climate with the appointment of Mr John Major as the prime minister.

Last week the market kept up the momentum, with gains in particular in long-duration bonds which mature early next century. The 9 per cent benchmark Treasury bond, maturing in 2008, closed on Friday night at 88¾, a rise of 1⅛ points on the week. Yields fell as a result. The rise in the gilt price followed a 2 point increase the week before.

The December long-gilt future reflected this movement, closing on Friday at 88, against 86¾ the week before.

Several factors are behind this pattern. Signs of a recession are becoming clearer. As a result, financial markets are gathering confidence that the 14 per cent base rate will be cut by the end of the year.

Last week the Confederation of British Industry predicted a 1 per cent contraction in total UK output next year, against the official Treasury projection of growth of 0.5 per cent.

This was followed by a warning from Sir Denys Henderson, chairman of Imperial Chemical Industries, of a recession lasting up to 18 months. The speech by the boss of Britain's biggest manufacturing company will not have endeared Sir Denys to Mr Major, who in recent weeks has talked about a short, shallow economic decline.

On Thursday, City analysts came up with the latest estimates for M0, the narrow measure of money in the economy mostly made up of notes and coins. These showed that M0 fell in the three months to the end of November by 2.3 per cent on an annualised, seasonally adjusted basis. That would be the steepest decline since mid-1982.

Since the Treasury is especially fond of M0 as a tool to monitor demand pressures in the economy, it is likely that Mr Norman Lamont, the chancellor, will pore over the figures with great interest. They support the view that inflationary trends in the economy are easing and that a cut in base rates could soon follow.

The big question is when. Many analysts reckon on Mr Lamont waiting until after December 14 – the date when the government is expected to announce a fall in the annual inflation rate to about 10 per cent, against the 10.9 per cent in October – before easing borrowing conditions.

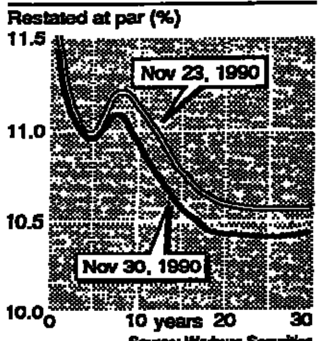
The Bank of England, which advises the Treasury on interest rates, has tried to damp the speculation about an early cut in rates. In a series of money-market actions in recent weeks – most recently on Friday – it has insisted on not going beneath the base rate when lending to the banking system.

Despite this, the three-month interbank rate, which gives a general guide to expectations in the banking system about future interest rates, closed on Friday night at 13.5 per cent, little changed on the week.

Peter Marsh

UK gilts yields

Restated at par (%)



Source: Warburg Securities

US MONEY AND CREDIT

Easing hoped for sooner, not later

NOW THAT Mr Alan Greenspan, the cautious chairman of the Federal Reserve, has characterised the US economy as being in a "meaningful downturn" the question being asked in the bond market is when Mr Greenspan will produce a meaningful easing of monetary policy.

The consensus is that this week's schedule of economic data, especially the employment figures due on Friday, could persuade Mr Greenspan and his colleagues at the Fed that it would be better to ease sooner rather than later. The employment data is expected to show a rise in the unemployment rate of at least 0.1 per cent, to 5.8 per cent.

Some analysts reckon that the macro-economic news this week, beginning with today's expected further decline in the US purchasing managers' index, the key survey of economic conditions, will not only define the market's mood between now and year-end, but will convince the Fed to ease rates before its next Open Market Committee meeting on December 18.

The purchasing managers' index fell to an eight-year low of 43.3 per cent in October – a reading below 44 per cent means the economy is contracting. Estimates for the November index, to be revealed today, range from 41.8 per cent to 43 per cent, which would reinforce the view of Mr Robert Brusca, chief economist at Nikko Securities, that the US economy is "imploding."

Neither Mr Greenspan nor Bush administration officials have been willing thus far to use what is known in Washington as the "R" word. Recession is a politically inconvenient term. The administration's preference on televised occasions is to blame President Saddam Hussein of Iraq for damaging the US economy, although economists know that conditions in the US were weakening before the Gulf crisis.

On Friday President Bush reiterated his view that the economy was "at best in a serious slowdown".

The President's announcement that he was willing to hold direct talks with Iraq sent the bond market into a rapid-fire rally, with a gain of 1 1/32 on the day for the benchmark 8.75 per cent 30-year Treasury bond, as the price of crude oil fell by more than $4 on the day, to $28.85.

Friday's rally brought the yield down to 8.39 per cent, a shift of just 5 basis points on the week, but considered by the market to be a harbinger of things to come.

Although the situation in the Gulf moved prices on Friday, the market's tone continues to be influenced by the steady flow of data indicating that recession or worse is now under way. On Friday the monthly index of leading indicators for October showed a drop of 1.2 per cent, the fourth consecutive monthly decline.

The more pessimistic analysts and especially those who are following the woes of the commercial banking industry, fear that the problems facing the US economy are so structural that they signal something worse than recession.

Last week President Bush met bankers to discuss their troubles while Mr Nicholas Brady, the treasury secretary, outlined his proposals for legislative reform of the banking and securities industries.

Meanwhile US and foreign banks have been paying high prices for short-term money to prepare for year-end window-dressing of balance sheets.

The increasing cost of bank funding can have a counter effect on the price of Treasury bonds. Last Wednesday, for example, a brief rise in bond prices was wiped out by problems in the interbank market and an auction of five-year Treasury notes.

Some Japanese banks paid staggering rates, as high as 19 per cent for short-term funds, while US banks paid as much as 15 per cent. The Japanese meanwhile repatriated some $1.9bn of foreign bonds in October and are now thought to be net sellers of US Treasury paper. Cash is being collected in Japan to help smooth over the banking crisis there.

Back on Wall Street the twin prospects of a slew of negative economic news and a trip to Baghdad by Mr James Baker, the secretary of state, suggest to some analysts such as Mrs Maria Ramirez that the long-bond's yield could soon drop as low as 8.25 per cent.

The consensus view remains that it is wise to stay in short Treasury paper for the time being, but if the oil price remains below $30 a barrel and statistics show that the US economy's "meaningful downturn" is becoming a profound downturn then there is every reason to expect a continued rise in T-bond prices between now and Christmas.

War in the Gulf – before or after the UN Security Council's January 15 deadline – would, of course, change everything.

Alan Friedman

US MONEY MARKET RATES (%)

	Last Friday	1 week ago	4 wks ago	12-month High	12-month Low
Fed Funds (weekly average)	7.50	7.50	7.88	9.92	7.50
Three-month Treasury bills	7.23	7.23	7.30	9.11	7.20
Six-month Treasury bills	7.35	7.31	7.39	9.37	7.18
Three-month prime CDs	8.30	7.95	7.95	10.35	7.65
30-day Commercial Paper	7.75	7.70	7.80	9.95	7.75
90-day Commercial Paper	8.15	7.83	7.75	10.05	7.70

US BOND PRICES AND YIELDS (%)

	Last Fri.	Change on wk	Yield	1 week ago	4 wk. ago
Seven-year Treasury	102 7/8	+¼	8.16	8.14	8.40
20-year Treasury	108¼	+1/32	8.41	8.46 8.71	
30-year Treasury	103 3/32	+½	8.39	8.44	8.69

Money supply: In the week ended November 19, M1 rose by $3.6bn to $823.6bn

JAPANESE BONDS

Counting on peaceful end in Gulf

IN A bad year for Japanese government bonds, the past two months have seen a surprising strength despite the continuing threat of a conflict in the Gulf, encouraged by signs that Japan's economic growth has peaked.

The strength was shown during Friday's trading, when the 10-year benchmark bond initially fell sharply with the yen, which was pushed down by fears aroused by the United Nations Security Council resolution on the Gulf. Soon after, demand for bonds turned the market around, while the yen continued to languish.

Traders generally think the bond market has accounted for a peacefu' settlement of the Gulf cris , though the prospect of US-Iraq negotiations could push bond prices higher this week. Trading has been influenced by aggressive buying of bond futures and traders will take a lead from the March 1991 contract on 10-year bonds, which closed at 93.40 on Friday, up 0.25 from Thursday.

The market has shown greater resilience than the yen over the past week, but the course of the currency market is seen as the immediate guide to the direction of bond prices.

The buoyancy of the market, with the benchmark No 119 10-year bond yielding 7.425 per cent at Friday's close, has highlighted the widening gap in the inverted yield curve. On Friday, there were 80 basis points between overnight rates and the benchmark bond and a full 1 per cent between the 10-year bond and three-month certificates of deposit.

Mr Toshihide Mizuno, deputy general manager of capital markets trading at Sanwa Bank, said the signs of a slowdown in Japanese economic growth had raised the possibility of a cut in the official discount rate (ODR) early next year. The Bank of Japan, concerned about inflation, had pushed rates higher to slow growth and could soon be satisfied with the results.

Traders also said that concerns in the equity market about a possible plunge in property values and the impact on several heavily exposed companies had prompted institutional investors to seek "quality" returns from the bond market. The stock market was troubled last week by rumours of financial difficulties at a large investment company with holdings in several well-known firms and a significant property portfolio.

Mr Marshall Gittler, at UBS Phillips & Drew, said investors were "very worried about the real estate market". He believed the bond market's strength was an incentive to buy, particularly for people who "have missed the rally so far" but who feel that the momentum will continue to create profit opportunities.

There are fears that the market has been too enthusiastic in embracing the prospect of peace in the Gulf and that a sudden surge of tension will mark the end of the rally.

Ms Kuniko Usui, at James Capel, said institutions had played an important role, as they were avoiding the stock market, where turnover had been consistently low in the past month. And, she said, a slowdown in banks' demands for subordinated loans from insurance companies had freed funds for the bond market.

Robert Thomson

NRI TOKYO BOND INDEX

December 1983 = 100	29/11/90	Average yield (%)	Last week	12 wks ago	26 wks ago
	PERFORMANCE INDEX				
Overall	148.27	7.45	147.62	141.91	146.26
Government Bonds	145.30	7.38	144.82	138.08	144.45
Municipal Bonds	150.97	7.38	150.37	143.74	148.26
Govt.-guaranteed Bonds	153.46	7.48	152.58	147.01	150.31
Bank Debentures	146.46	7.40	145.65	140.91	143.15
Corporate Bonds	150.22	7.87	149.59	146.41	148.04
Yen-denom. Foreign Bonds	151.88	8.71	151.65	152.00	153.33
Government 10-year†	6.99	–	7.01	7.67	6.51

† Estimated par yield

Source: Nomura Research Institute

FT/AIBD INTERNATIONAL BOND SERVICE

U.S. DOLLAR STRAIGHT	Issued	Bid price	Chg on week	Yield
ABBEY NATIONAL 8 7/8 93	150	100¼	-⅛	8.71
ABN 9 1/8 94	200	100⅛		8.89
AETNA LIFE & CAS 7 3/4 16	200	97¼	-⅛	8.01
ALBERTA PROVINCE 8 5/8 96	750	98¾	-⅛	8.90
ALBERTA PROVINCE 9 3/8 95	600	102½	-⅛	8.72
AMERICAN EXPRESS 0 00	450	38		10.12
AMERICAN GENERAL 9 3/4 95	100	94⅞	-½	11.20
ANHEUSER-BUSCH 9 1/8 92	100	100¾		8.61
ASIAN DEV BANK 0 04	1000	28¼	-⅛	9.49
AUSTRALIA 11 95	200	107⅜		8.81
AUSTRALIAN WHEAT 9 1/2 93	200	102	-⅛	8.72
[illegible]				
PRUDENTIAL RLTY SECS 0 97	385.216	[illegible]		9.81
QANTAS AIRWAYS 8 5/8 96	97.75	98¼		9.03
QUEBEC HYDRO 9 3/4 98	150	102	-⅛	9.37
QUEBEC PROV 9 98	200	98¾	-⅛	9.27
QUEENSLAND GOVT 10 1/4 95	100	104⅝		9.11
RALSTON PURINA 11 3/4 95	150	105⅝		10.04
REED PUBLISHING 9 5/8 97	150	99⅞	-⅛	9.79
REYNOLDS (RJ) 10 1/4 93	100	91⅞	-⅛	13.90
SAINSBURY 9 1/8 96	150	100¼	-⅛	9.06
SARA LEE 9 3/8 93	150	100⅜	-⅛	9.18
SAS 10 99	200	100⅞	-⅛	9.89
SAS 10 1/8 95	150	102¼	-⅛	9.54

	Issued	Bid price	Chg on week	Yield
SASKATCHEWAN 15 92	150	109⅝		8.62
SBAB 9 1/2 95	500	102⅞	-⅛	8.84
SEAGRAM CO 8 1/2 96	100	94⅞		9.75
SEARS O/S FIN 0 98	500	45⅜	+⅛	10.77
SEARS O/S FIN 11 5/8 93	150	103⅞	-⅛	9.98
SKANDIA INTL 7 1/4 92	200	98¼		8.72
SNCF 7 1/4 94	175	96¼	-⅛	8.45
SNCF 9 1/2 98	150	102⅝	-⅛	8.99
STATE BK STH AUST 9 1/4 93	100	101⅝		8.63
STATE EL VICTORIA 10 92	100	102⅜	-⅛	8.66
STATOIL 7 5/8 94	200	95⅜	-⅛	9.14
STH AUST GOVT FIN 8 3/4 93	100	100¼	-⅛	8.65
[illegible]				
EIB 6 7/8 95	300	92⅝	-⅛	8.90
EUROFIMA 6 1/4 98	400	84¼	+⅛	9.23
FELDMUEHLE FINANCE 8 99	200	91⅞		9.39
FERRO DEL STAT 5 3/8 93	500	93⅞		8.92
IND BK JAPAN FIN 5 5/8 96	200	84¼	+⅛	9.47
INTER AMER DEV 7 1/4 99	300	89⅞		9.10
LUFTHANSA INT FIN 5 7/8 98	500	83	+⅛	9.13
QUEBEC HYDRO 6 3/4 99	300	85⅞	-⅛	9.29
SWEDEN 6 1/8 98	300	85⅜	+⅛	8.98
WORLD BANK 0 15	2000	14⅝	+⅛	7.94
WORLD BANK 5 3/4 96	300	86¼		9.13
WORLD BANK 7 1/8 95	500	93⅝		9.05

SWISS FRANC STRAIGHTS	Issued	Bid price	Chg on week	Yield
ASIAN DEV BANK 6 10	100	81½	-⅛	7.87
AUSTRIA 4 5/8 98	100	86½	+⅛	7.08
CHUJITSUYA 7 3/4 95	50	100½	-½	7.61
COUNCIL EUROPE 4 3/4 98	250	84½	+½	7.62
EEC 5 1/2 00	100	86¼	+¼	7.51
EIB 5 3/4 93	100	97	-½	6.92
FINLAND 5 3/8 95	150	93½	-½	6.98
GENERAL MOTORS 7 1/2 95	100	100½		7.35
JAPAN DEV BK 5 1/2 94	100	94½	-½	7.49
MOUNT ISA FINANCE 5 3/4 94	100	86½	+½	10.61
NEW ZEALAND 4 7/8 99	200	83	+⅛	7.75
[illegible]				
HINO MOTORS	[illegible]			
KIRIN BREWERY	06/07/94	10	-1⅛	48.10
MITSUBISHI EST	23/07/92	3½	-1	70.53
MITSUI REAL ESTATE DEV	11/03/94	7½	-4½	
NICHII	20/03/92	4½	-2½	92.86
NIPPON MEAT PACKERS	17/02/93	4	-2½	88.24
NIPPON OIL	17/09/92	4½	-1	90.82
SUMITOMO CHEM	14/08/92	5½	-½	50.19
TOYO SASH	20/01/93	4½	-½	
TOYOTA MOTOR	27/04/93	14½	-4½	31.72
UNITIKA	15/07/92	19½	-2½	10.43
YAMANOUCHI PHARM	20/07/93	4½	-1	89.98
	30/06/92	6½	-1½	47.56

STRAIGHT BONDS: Yield to redemption of the bid-price. Amount issued is expressed in millions of currency units.
FLOATING RATE NOTES: US dollars unless indicated. Margin above six-month offered rate for US dollars. C.cpn = current coupon.
CONVERTIBLE BONDS: US Dollars unless indicated. Prem = percentage premium of the current effective price of buying shares via the bond over the most recent share price.
WARRANTS: Equity warrant prem = exercise premium over current share price. Bond warrant ex yld = exercise yield at current warrant price.

Closing prices on November 30

THE WEEK AHEAD

ECONOMICS

Continuity expected from the UK

IN THE UK, it will be a week for assessing the economic outlook under a new prime minister and a new chancellor.

Both are likely to stress – with their cautious Treasury backgrounds – that continuity is to be the order of the day.

Although London's financial markets are brimming with anticipation of an interest rate cut, both men are also likely to stress that monetary policies will have to stay tight in order to bring down inflation and interest rates.

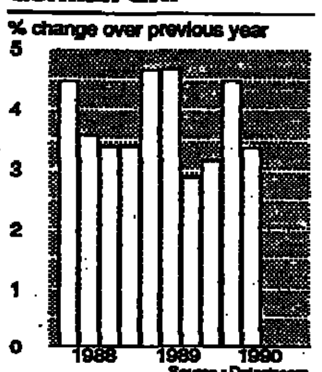
The Gatt round of trade talks, proceeding in Brussels today, are showing signs of imminent collapse. If negotiations do break down this will intensify the risk of world recession.

Mr Norman Lamont, the UK chancellor, will have made his debut on the international scene in Brussels at the weekend, but the "business" meeting of economics and finance ministers is expected to discuss European economic integration today without him.

Evidence about the strength of the unified German economy, in the shape of industrial production and trade figures, are out this week.

German GNP

% change over previous year



Source: Datastream

Along with third quarter gross national product data (predicted by MMS international, the financial research company, to show an annual growth rate of 5.6 per cent), these will give clues as to whether the Bundesbank, the central bank, will create tension between members of the exchange rate mechanism by pushing German interest rates up.

This would narrow the interest rate differential between sterling and the D-mark, and undermine the pound's status as the highest yielding currency in the ERM at a time when it is additionally the weakest.

Traders will be watching to see whether the dollar's recent rally off its record low levels will be sustained.

Other events and statistics, with MMS forecasts in brackets, include:

Today: UK, final retail sales for October (down 1.1 per cent), credit business for October. Brussels, Ecofin meeting to discuss European economic and monetary union. US, NAPM Index (43.0 per cent), construction spending (down 1 per cent). Canada, leading indicators. Japan, foreign exchange reserves for November.

Tomorrow: UK, official reserves for November (down $100m), EC budget debate in the House of Commons. Germany, third quarter gross national product (5.2 per cent, year-on-year).

Wednesday: UK, housing starts and completions for October, advance energy statistics for October, detailed analysis of labour market statistics. In Westminster Hall, Mr Norman Lamont to give evidence on the 1990 public expenditure Autumn Statement. US, Fed releases Tan Book, factory orders (2 per cent) and shipments, non-farm productivity and auto sales for November. Germany, labour market statistics for east and west (28,000).

Thursday: UK, new earnings survey, 1990, Confederation of British Industry/Financial Times survey of distributive trades. UK, House of Commons Treasury first new order questions. US, money supply data.

Friday: UK, construction output, third quarter. US, non-farm (down 75,000) and manufacturing payrolls (down 60,000) for November, consumer credit.

During the week: Germany, industrial production (0.3 per cent) manufacturing output (0.3 per cent) for October, current account and trade balance for October (DM4.5bn). Japan, third quarter gross national product (4.1 per cent.)

Rachel Johnson

UK COMPANIES

LORD WEINSTOCK, managing director of the General Electric Company, will disclose tomorrow further details of the impact on the company of its joint acquisition with Siemens of West Germany of Plessey the defence electronics group.

As GEC's financial controls have been working through Plessey like a barium meal highlighting its strengths and weaknesses, the interim results on Tuesday will probably be affected more by the costs of rationalisation at Plessey, with the benefits coming through in the second half.

Most analysts are expecting per-tax profits of between £335m and £345m, down from £357m at the same stage last year.

Siebe, the instruments and controls engineering group is expected tomorrow to report pre-tax profits of between £85m to £90m for the first six months, against about £81m last year. Most attention will focus on the progress Siebe is making to improve margins and realise unwanted assets at Foxboro, its recent US acquisition. Analysts will want to know how the company plans to reduce its gearing, which was pushed from 40 per cent to 100 per cent by the deal.

Interim results to end-September from Pilkington, the glass maker, on Thursday are expected to be grim, with pre-tax profits well down on the £147.1m reported for the corresponding six months.

Forecasts range a fair way either side of £100m. Worse, analysts are expecting a gloomy statement from the company and are sharpening their pencils ready to cut full-year forecasts after the figures are announced, perhaps to £200m (against £314.3m). However, the dividend is expected to be maintained.

Grand Metropolitan, the food, drinks and retailing group, is expected to unveil on Thursday pre-tax profits for the year some 24 per cent higher at £910m, together with a further reduction in debt.

UK COMPANIES

■ TODAY
COMPANY MEETINGS:
Attwoods, The Pickeridge, Stoke Common Road, Fulmer, Bucks., 12.00
BOARD MEETINGS:
Finals;
Dobson Park
Dundee & London Inv. Tst.
Trafalgar House
Westland
Interims;
Alexon
Allen
Anglian Water
Atkins Bros. (Hosiery)
Chamberlin & Hill
Cranswick Mill
Edbro
Elga
Marina Developments
Oceana Consolidated
Phoenix Timber
Rolfe & Nolan
Syltone
Tex Holdings

■ TOMORROW
COMPANY MEETINGS:
Allied London Props., The Inn on the Park, Hamilton Place, Park Lane, W., 12.00
Beckman (A.), Durrant Hotel, W., 12.00
UDO Hldgs., Great Eastern Hotel, Liverpool St., E.C., 10.30
BOARD MEETINGS:
Finals;
Bass
Eldridge Pope
Holmes & Marchant
Sycamore Holdings
Tubular Edginton
Interims;
Allied Colloids
Cape
Compco
Courts Furnishers
Drummond
Evans Of Leeds
General Electric Co.
In Shops
Mansfield Brewery
Morris Ashby
Norcros
Northern Investors
Porter Chadburn
Reed Executive
Siebe

■ WEDNESDAY DECEMBER 5
COMPANY MEETINGS:
Air London Intl., Beetson Gregory, The Registry, Royal Mint Court, E.C., 10.00
Lawtex, Avant Hotel, Windsor Road, Manchester Road, Oldham, 3.00
Pressac Hldgs., Novotel, Bostock Lane, Long Eaton, Nottingham, 3.00
Scottish Metropolitan Property, Bothwell Suite, The Albany Hotel, Glasgow, 11.30
BOARD MEETINGS:
Finals;
Avon Rubber
New Zealand Inv. Tst.
Saatchi & Saatchi
Sage
Interims;
Aveseo
Caffyns
Casket
Fleming Intl. High Inc. Inv.
JLI
Rowlinson Securities
Salvesen (Christian)
Tams (John)

■ THURSDAY DECEMBER 6
COMPANY MEETINGS:
Investors Capital Trust, 1 Charlotte Square, Edinburgh, 12.30
Photo-Me Intl., Church Road, Bookham, Surrey, 6.00
BOARD MEETINGS:
Finals;
Archer (A J)
Brown & Tawse
Euromoney Publications
Grand Metropolitan
Hanson
Lovell (YJ)
Murray Enterprise
Tunstall
Interims;
Anglo United
BTP
Channel Express
Clarke Hooper
Dartmoor Inv. Tst.
Douglas (Robert M)
Gibbon Lyons
Greycoat
MacDonald Martin Distilleries
Latham (James)
Pilkington
Scapa
Security Archives
Smith New Court
Throgmorton Dual Tst.
Wellman

■ FRIDAY DECEMBER 7
COMPANY MEETINGS:
Castle Comms., 15 Northfields Prospect, Putney Bridge Road, S.W., 12.00
Honeysuckle, 11 Regents St., Leeds, 12.00
Raglan Property Trust, Farmers & Fletchers Livery Hall, Cloth St., EC., 10.00
VTR, 66 Wilson St., E.C., 12.00
BOARD MEETINGS:
Finals;
Chrysalis
Interims;
Boxcombe Property
Chloride
Jones, Stroud
Leica
UMECO

■ SUNDAY DECEMBER 9
BOARD MEETINGS:
Interims;
Creightons Naturally

Company meetings are annual general meetings unless otherwise stated.

DIVIDEND & INTEREST PAYMENTS

■ TODAY
Asarco 40cts
Austin Reed 3p
Do. 'A' Non Vtg 3p
Automated Security 1.8p
Barclays Bank non Cum $ Den Prf Srs C1 42.1875cts
Do. Non Cum $ Den Prf Srs C2 10.5475cts
Do. Non Cum $ Den Prf Srs A 52.125cts
Do. Non Cum $ Den Prf Srs B 50.975cts
Bourne End Props 1p
Braithwaite 3.5p
Croda Intl. 4.1p
Edinburgh Inv. Trust 2.75p
Ensearch 20cts
Fujitsu Y4.5
Garton Engineering 1.75p
General Motors Acceptance 8¾% Notes 1994 4.375pc
Goodman Fielder Wattie 6cts
Hogg 3p
Ibstock Johnsen 2.25p
Inco 25cts
Ingersoll-Rand 33cts
Kleinwort Development Fund 6.09p
Lamont Holdings 3.6p
Legal & General 5.9p
Lockheed 45cts
MB Group 7.25p Cnv Cum Red Prf 3.625p
Do. (Rest Transfer) 3.625p
North American Gas Inv. Trust 1.5p
OKG Rest Bonds 1997 $88
Porth 0.5p
RMC 6.4p
Rolls-Royce 2.55p
Scottish Mortgage & Trust 1.25p
Serif Cowells 1.5p
TR Smaller Companies Inv. Trust 4½% Cum Prf Stk 1.575p
TSW Holdings 3.77p

■ TOMORROW
Anglo American Inv. Trust 72cts
Higgs & Hill 6p
Jardine Matheson (Bermuda Reg.) 3.15cts
Do. (H. K. Reg.) 3.15cts
Do. (Jersey Reg.) 3.15cts
Lloyds Chemists 2p
QS Holdings 1.31p
St Ives 3.5p

■ WEDNESDAY DECEMBER 5
Bank Of Ireland Und Var Rate Nts $2159.35
Betterware Cons. Prods. 1.35p
Bilton (Percy) 5.4p
Do. Accum Shs 0.1p
Gerrard & National 6p
Gillette 27cts
Laird 4p
TIP Europe 3.6p
Vanbrugh Currency Fund Ptpg 'A' Red Prf 9p
Do. Ptpg 'B' Red Prf £9.00

■ THURSDAY DECEMBER 6
Air London Intl. 1.4p
BFG Finance Fltg Rate Nts 1996 $206.96
Boxmore Intl. 2p
Canadian & Foreign Secs. 12cts
Exmoor Dual Inv. Trust 1.685p
Do. Income 2.6p
Export-Import Bank of Korea Fltg Rate Nts Dec 1995 $438.44
Ferguson Intl. Hldgs 4.25p
Glynwed Intl. 7½% Deb Stk 89/94 3.75pc
Greenall Whitley 4½% Deb Stk 87/92 2.25pc
Do. 7¼% Deb Stk 87/92 3.625pc
Hi-Tec Sports 1.5p
Ladbroke 8% Gtd Uns Loan Stk 90/92 4pc
Meggitt 1.1p
Natl. Westminster Bank Var Rate Cap Nts 2009 £378.85
Nationwide Anglia Building Society Fltg Rate Nts 1995 £373.35
New Zealand Fltg Rate Nts 1996 $425.73
Petrocon 0.625p
Pressac Hldgs. 1.65p
Sindall (Wm) 1.5p
Standard Chartered Und Prim Cap FRN (Ser 3) $433.35
UDO Hldgs. 3.24p
Watney, Mann & Truman Hldgs 7% Red Deb Stk 88/93 3.5pc

■ FRIDAY DECEMBER 7
Antofagasta Hldgs 6p
Barry Wehmiller Intl. 4.3p
Boeing 25cts
Bridon 2.5p
Burnfield 1.65p
Colroy 6p
East Daggafontein Mines 55cts
English National Inv. 5p
Everest Foods 4p
Farnell Electronics 2.5p
French Connection 0.9p
Investors Capital Trust 1.25p
Lilley 1p
Moss Bros 1.5p
National Medical Ent. 20cts
P & O Property Hldgs 7½% 1st Mtg Deb Stk 97/2002 3.75pc
Photo-Me Intl. 2.8p
Pochin's 16p
Prudential Corp Fltg Rate Nts 1995 $376.47
Racal Security 8½% Uns Loan Stk 87/92 4.25pc
Do. 8½ Uns Loan Stk 92/95 4pc
River & Mercantile Extra Inc. Trust 1.875p
Shiloh 3.375p
Spring Ram 0.144p
TNT 3.75cts
Trafford Park Ests. 1.725p
VTR 2.2p
Yorklyde 4p

■ SATURDAY DECEMBER 8
Lilly (Eli) 41cts
Quarto 1.5p
Reed Intl. 5% Cum Prf 1.75p
Do. 7% Cum Prf 2.45p

■ SUNDAY DECEMBER 9
European Inv. Bank 9½% Ln Stk 2009 4.75pc
Treasury 10% Ln Stock 1994 5pc

PARLIAMENTARY DIARY

■ TODAY
Commons: Community Charges (substitute setting) Bill, second reading. Caravans (standard community charge and rating) Bill, second reading.
Lords: Census (confidentiality) Bill, Committee. Natural Heritage (Scotland) Bill, Committee.
Select Committee: Public Accounts — subject, Charity Commission. Witness: R. Guthrie (Room 16, 4.30 pm).

■ TOMORROW
Commons: Debate on EC documents relating to the 1991 EC Budget. Debate on the Debts of Overseas Government (determination of relevant percentage) regulations. Opposed private business from 7.00 pm.
Lords: New roads and Street Works Bill, Committee. Gaming (Amendment) Bill, Committee. Select Committee: Members' interests — subject, Parliamentary lobbying. *Witnesses: Public relations consultants' Assn.* Institute of Public Relations (Room 16, 4.15 pm).
Committee on Private Bill: Midland Metro Bill (Room 6, 10.30 am).

■ WEDNESDAY
Commons: Opposition debate on the Abolition of the Poll Tax. Motion on the National Health Service (Local Health Councils) (Scotland) Regulations.
Lords: Debate on the Case for the Incorporation of the European Convention on Human Rights into UK Law as a Bill of Rights. Debate on Land Use in Britain. Question to Government on the Route of the M1 to A1 Link Road Across the Naseby battlefield site.
Select Committees: Foreign Affairs — subject: Southern Africa. Witnesses: Overseas Development Institute and Mrs Lynda Chalker MP, Overseas Development Minister (Room 5, 10 am).
Environment — subject, Indoor Pollution. Witness: *Carrick District Council.* (Room 21, 10.30 am).
Energy — subject, Energy efficiency. Witnesses: Dept of Environment officials, and Mr Robert Malpas (Room 8, 11.00 am).
Foreign Affairs — subject, European Council. Witness: Rt Hon Douglas Hurd, MP, Foreign Secretary (Room 8, 3.15 pm).
Transport — subject, London Underground Ltd. Witnesses: Chairman and officials from London Underground Ltd (Room 15, 3.30 pm).
Agriculture — subject, Microwave ovens. Witnesses: Consumers' Assn, National Consumer Council, Food and Drink Federation (Room 21, 3.45 pm).
Treasury and Civil Service — subject, the Autumn Statement. Witness: Rt Hon Norman Lamont MP, Chancellor of the Exchequer (Gr Committee Room Westminster Hall, 4.00 pm).
Employment — subject, Work of the Employment Group. Witness: Rt Hon Michael Howard, MP, Employment Secretary (Room 20, 4.15 pm).
Public Accounts — subject, Nuclear Research and Development. Witness: *Sir Peter Levene, Ministry of Defence* (Room 16, 4.15 pm).

■ THURSDAY
Commons: Debate on Developments in the European Community.
Lords: New Roads and Street Works Bill, Committee. Teachers pay and Conditions Act 1987 (Continuation) Order, Motion for Approval.
Select Committee: Trade and Industry — subject, British Steel: Ravenscraig and Clydesdale. Witness: Sir Robert Scholey, Chairman, British Steel (Room 15, 10.30 am).
Committee on Private Bill: Midland Metro Bill (Room 6, 10.30 am).

■ FRIDAY
Commons: Private Members Motions.

CONTRACTS & TENDERS

LEGAL NOTICES

WILLIAM OLD (CIVIL ENGINEERING & BUILDING) LIMITED

We, C.J. Hughes and R.M Addy or Shelley House, 3 Noble Street, London EC2V 7DQ hereby give notice that on the 19th day of November 1990 we were appointed administrative receivers of the above named company by Midland Bank plc under the terms of a debenture dated 2nd September 1985 giving the holders a fixed and floating charge over (the whole) (substantially the whole) of the assets of the company.

C.J. Hughes
R.M. Addy
Joint Administrative Receivers

TRADE FAIRS, EXHIBITIONS & CONFERENCES

CONFERENCES

DECEMBER 3-4
Achieving Excellence Through Continuous Improvement
The Gloucester Hotel, London SW7 Contact: Customer Services Manager, Inudstrial Conferences Division, IIR Ltd.
Tel: 071-412 0142
Fax: 071-412 0144
LONDON

DECEMBER 5
International Pay Policies Conference.
Gloucester Hotel, SW7. Speakers from CBI, TUC, NEDO, ILO, PW and LSE. £175+ VAT. Public Finance Foundation (071-895 8823 Ext. 239/255)
LONDON

DECEMBER 11
ACQUIRING IN ITALY.
Le Meridien Hotel, Piccadilly, London W1. A comprehensive guide to the Italian M & A scene. Sponsored by Financiere Indosuez, Coopers & Lybrand Europe and Manufacturers Hanover. Contact FIBEX Tel: 071-489 9944
Fax: 071-236 6140
LONDON

JANUARY 10
The Telecomms Duopoly Review
Le Meridien Hotel. Examines the future of UK regime. Keynote speaker, Sir Bryan Carsberg plus speakers from cross-section of the industry.
CommEd: Tel 071 274 8725
Fax: 071-733 0226
LONDON

JANUARY 16
Neural Technology - the technology that will change the face of computation in business and industry
Queen Elizabeth II Conference Centre, London IOP Conferences. Contact: Tilly Quanjer.
Tel: 0272 297481 Ext. 225
Fax: 0272 294318
LONDON

JANUARY 22
Corporate Insolvency: The Legal AspectsA thorough analysis of the main aspects of insolvency law as they affect UK corporate entities. St. Ermins Hotel, London SW1. Contact: Westminster Management Consultants Ltd.
Tel: 0483 740730
LONDON

JANUARY 24
ACQUIRING IN GERMANY
Inn on the Park Hotel, Park Lane, London W1. A comprehensive guide to the M&A scene in the *unified* Germany. Sponsored by Coopers & Lybrand Europe and the Lecham Partnership. Contact FIBEX Tel: 071-489 9944
Fax: 071-236 6140
LONDON

JANUARY 30
Doing Business in Eastern Germany: The Legal Aspects
Speakers from leading German law and accounting practices, the Ministry of the Economy and the Treuhandanstalt. Cavendish Conference Centre, London W1. Contact: Westminster Management Consultants Ltd.
Tel: 0483 740730.
LONDON

JANUARY 31
PERSONNEL ON THE FRONT LINE Essential skills for human resource professionals, including performance appraisal, are examined in conference and workshops. Queen Elizabeth II Conference Centre, SW1 Contact: Personnel Today Workshop '91 on: 081-979 9232.
Fax: 081 941 7707
LONDON

FEBRUARY 12
MANAGING I.T. WHEN THE GOING GETS TOUGH! Quality as the Differentiating Factor One day seminar, Inn on the Park, London. Contact Amanda Stuart, IBC Technical Services Ltd. Tel: 071-236 4080.
LONDON

FEBRUARY 13 & 14
International Banking
Hotel InterContinental, London
Enquiries: Financial Times Conference Organisation
Tel: 071-925 2323
Fax: 071-925 2125
LONDON

FEBRUARY 18 & 19
European Insurance Forum
Hotel InterContinental, London
Enquiries: Financial Times Conference Organisation
Tel: 071-925 2323
Fax: 071-925 2125
LONDON

FEBRUARY 26 & 27
Cable Television and Satellite Broadcasting
Hotel InterContinental, London
Enquiries: Financial Times Conference Organisation
Tel: 071-925 2323
Fax: 071-925 2125
LONDON

FEBRUARY 27
EXECUTIVE INFORMATION SYSTEMS
One day conference on EIS and the future. Portman Hotel, London.
Contact: Lucinda Tosh, IBC Technical Services Ltd.
Tel: 071-236 4080
LONDON

MARCH 4
London Motor Conference
Hotel InterContinental, London
Enquiries: Financial Times Conference Organisation
Tel: 071-925 2323
Fax: 071-925 2125
LONDON

MARCH 6 & 7
The European Water Industry
Hotel InterContinental, London
Enquiries: Financial Times Conference Organisation
Tel: 071-925 2323
Fax: 071-925 2125
LONDON

MARCH 12 & 13
The European Food & Drink Industry in the 90s
Hotel InterContinental, London
Enquiries: Financial Times Conference Organisation
Tel: 071-925 2323
Fax: 071-925 2125
LONDON

OVERSEAS

DECEMBER 11-12
The Future of Digital Cellular Mobile Radio. International survey on managing the change and the opportunities presented by leading team of international experts. Maison de la Chimie, Paris. Contact: CommEd (UK) 071-733 0226 Fax 071-733 0226
PARIS

WORLD STOCK MARKETS

AUSTRIA

1990 High	Low	November 30	Price Sch
5,430	2,100	Austrian Airlines	2,600
7,300	3,200	Creditanstalt	3,200
29,590	16,950	Erste Allgemeine	20,800
19,600	8,100	Jungbunzlauer	8,100
1,435	660	Laenderbank	1,350
14,230	8,000	OeMV	8,750
2,380	1,360	Perlmooser	1,530
1,400	695	Rades	775
3,400	1,460	Reininghaus	1,600
250	115	Steyr-Daimler	158
1,510	659	Veitscher Mag	683
770	425	Verbund (Br) A	470
7,580	4,100	Wienerberger	4,910

BELGIUM/LUXEMBOURG †

1990 High	Low	November 29	Price Frs.
5,370	2,230	ACEC-Union Min	2,240
5,750	2,900	Arbed	3,010
3,520	2,410	B B L	2,410
15,700	13,000	Bank Intl. a Lux	13,050
15,000	13,000	Banque Gen. Du Lux	13,000
2,470	1,186	Barco	1,186
16,650	7,460	Bekaert	7,510
9,900	5,550	Ciment CBR	5,550
5,990	4,630	Cobepa	4,845
6,030	4,630	Do. AFV 1	4,810
214	132	Cockerill	132
2,970	1,860	Colruyt	2,740
6,920	5,000	Delhaize	5,850
4,560	3,755	EBES	4,410
4,490	3,670	Do. AFV 1	4,300
7,490	5,900	Electrafina	6,140
544	145	Fabrique Nat	197
1,476	1,082	GIB Group	1,082
1,460	1,050	Do. AFV	1,060
4,640	3,220	GBL (Brux)	3,400
4,630	3,205	Do. AFV 1	3,315
952	628	Gechem	648
930	602	Do. AFV	670
5,900	4,110	Generale Bank	4,195
6,100	4,350	Do. AFV 1	4,430
8,990	6,300	Gevaert	6,300
3,710	2,990	Intercom	3,545
3,660	2,900	Do. AFV 1	3,420
4,625	3,140	Kredietbank	3,205
4,650	3,100	Do. AFV	3,160
15,430	11,900	Pan Holdings	11,950
12,750	9,970	Petrofina	10,050
6,850	4,200	Royale Belge	4,200
6,900	4,250	Do. AFV 1	4,360
3,505	1,875	Soc Gen Belge	1,890
3,650	1,900	Do. AFV	1,950
14,700	10,250	Sofina	10,650
15,325	9,200	Solvay	10,125
10,300	4,910	Tessenderlo	5,350
10,025	4,900	Do. AFV	5,450
9,740	6,710	Tractebel	7,900
9,500	6,510	Do. AFV 1	7,510
26,950	16,875	UCB	18,100
25,000	14,850	Do AFV	16,800
2,645	2,060	Unerg	2,400
2,615	2,095	Do AFV 1	2,310
12,250	5,850	Wagons Lits	5,850
11,400	5,630	Do AFV	5,630

DENMARK

1990 High	Low	November 30	Price Kr
1,015	701	Baltica Hldgs	893
1,375	1,200	Carlsberg	1,310
980	809	Danisco	858
365.85	263	Den Danske Bank	267
285	185	East Asiatic	190
1,055	715.8	FLS Inds B	830
955.2	680	GN Great Nordic	720
1,080	680	Hafnia Invest A	790
940	780	I S S B Systems	830
445	350	Jyske Bank	350
1,870	1,170	Lauritzen (J) B	1,215
590	400	NKT A/S	410
340	277	Novo Nordisk	335.6
540	480	Royal C'hagen A	500
1,300	1,018	Sophus Berendsen	1,230
6,000	4,550	Superfos	4,550
1,480	1,010	TopDanmark	1,160
322	247	Unidanmark	247

FINLAND

1990 High	Low	November 30	Price Mka
165	50	Amer	65
94.5	32.3	Cultor	33
26.75	11.9	Enso-Gutzeit R	12
121	66	Huhtamaki I Free	70.3
52.6	28	KOP	31
712	450	Kone	451
125	50	Kymmene	59
100	47	Nokia Pref Free	55
135.5	22.5	Pohjola 'B' Free	76
46	21	Rauma-Repola	23
235	80	Stockmann 'B'	98
125	28	Tampella (Free)	38
32	18	UBF 'C'	19
167.5	85	Utd Paper Prf	85
471.5	360	Wartsila (s11)	380

FRANCE

1990 High	Low	November 30	Price Frs.
1,065	644	Accor	685
723	545	Air Liquide	624
3,180	1,540	Arjomari-Prioux	1,555
1,215	810	Auxiliare d'Ent	1,100
800	453	BIC	530
894	688	BSN	731
665	323	Bancaire Cie	461
489	216.9	BNP (Cert.Inv)	241

FRANCE (continued)

1990 High	Low	November 30	Price Frs.
935	657	Beghin-Say	675
685	480	Do Certs	560
3,480	2,287	Bongrain	2,450
683	369	Bouygues	418
726	356	CFAO	383
1,534	814	CGIP	835
235	100	CMB Packaging	106.8
993	766	Canal+	854
3,780	3,065	Carrefour	3,331
215	108	Casino	134
649	324	Cetelem	495
1,376	685	Chargeurs	746
1,813	913	Ciments Fr.	939
788	382	Club Mediterranee	433.8
486	345	Cogifi	374.5
652	460	CGE	540
771	343	Coparex	650
262.8	141.2	CCF	152
1,420	822	Cred Foncier Fr	840
898	501	Cred Lyons (CI)	505
1,591	861	Credit National	927
4,330	1,900	Damart	1,950
5,770	2,870	Docks de France	3,840
643	350	Dollfuss-Mieg	355
2,750	1,992	Eaux (Cie Gen)	2,200
620	290	Ecco	290
365	255	Elf-Aquitaine	325
262	203	Do. Certs	231.1
1,400	900	Epeda-Bertrand	933
604	250.1	Essilor	305
2,515	1,351	Etex	1,363
2,690	1,261	Eurafrance	1,348
1,225	637	Eurocom	650
108.2	75.7	Euro Disneyland	94.8
4,920	2,930	Euromarche	3,090
2,029	1,231	Exor	1,231
221	123	Finextel	138
1,120	605	Fonciere Lyonn	817
2,700	1,575	Fromageries	1,699
453	278	GTM-Entrepose	305
1,126	802	Gaumont (Soc N)	977
1,409	878	Gen Geophysique	921
875	521	Gen.Occidentale	545
484.8	143	Hachette	150.6
698	423.3	Havas	458.7
375	198.5	Imetal	212.9
1,685	1,101	Immeubles de Fr	1,101
860	640	Immobanque	672
9,400	4,000	Industrielle	4,600
540	370	Interbail	419
1,470	962	Intertechnique	1,050
5,450	3,110	LVMH	3,560
491	314	Lafarge Coppee	325.5
710	476	La Henin	485
555	420	L'Oreal	480.5
4,590	3,135	Legrand	3,745
549	386	Locafrance	468.9
745	435	Lyon Eaux Dumez	502
130.8	68.2	Maisons Phenix	127
420	205	Matra S.A.	223
639	450.2	Merlin-Gerin	455.5
176.8	58	Michelin B	68.5
1,442	831	Midi (Cie)	951
152	70.6	Moulinex	74.3
2,299	1,145	Navigation Mixt	1,145
206	116	Nord Est	122.5
815	533	Nouvelle Galer	770
1,999	1,310	OFP	1,450
394	107	Orsan	121.5
714	419.9	Paribas	478
503	243	Paris Reescompte	243
1,850	1,300	Pechelbronn	1,302
1,340	909	Pernod Ricard	989
1,869	1,034	Perrier	1,239
919	479.1	Peugeot S.A.	538
659	380	Poliet	410
1,240	878	Pretabail Sicomi	1,020
777	431	Printemps Au	568
2,280	1,750	Promodes	1,990
730	310	Radiotech	361.9
3,640	2,190	Redoute	3,010
485.5	191	Rhone-Poul (Cts)	223
2,379	1,630	Roussel-Uclaf	1,979
869	556	SILIC	600
1,700	1,298	Sagem	1,340
670	326.5	St.Gobain	369.6
1,618	1,005	Saint Louis	1,300
1,142	706	Sanofi	863
1,179	587	Schneider	654
1,380	991	Seb SA	1,229
550	383	Sefimeg	453.5
645	475	Simco	550
1,090	700	Skis Rossignol	702
629	335	Soc. Gen. de Fr	389
2,229	848	Sommer-Allibert	1,128xr
892	358.5	Spie-Batignolles	400.1
498.4	260.3	Suez (Fin de)	297.5
5,990	3,335	Taittinger	3,640
151.8	90	Thomson (CSF)	112
730	516	Total-Petroles Fr.	678
715	436	UAP	545
484	185	UFB Locabail	197
949	729	Unibail	740
707	525	Union Immob Fr	618
846	293	Valeo	350
489	201	Vallourec	226

GERMANY

1990 High	Low	November 30	Price Dm.
336.5	200.5	AEG	217
1,022	646	AG Ind & Verkehr	845
1,100	650	Aachener Mu (Reg)	710
2,963	1,938	Allianz AG	2,150
587	389.2	Altana	493
985	629	Asko Deutsche K	950
843	520	Do. Prf.	779
324	184.4	BASF	204.3
273	205	Badenwerk	230
334.5	195.3	Bayer	212.2
462.5	292.8	Bayer-Hypo	311

GERMANY (continued)

1990 High	Low	November 30	Price Dm.
658	378.5	BMW	414.5
459	303	Bayer-Verein	336
855	515	Beiersdorf	730
175	109.5	Berliner Kraft	116
528	343	BHF-Bank	372
1,004	604	Bilfinger & Berg	842.5
1,010	580	Brown Boveri	740
1,480	955	Colonia Versich	1,270
955	457	Do. Pref.	640
336.1	205	Commerzbank	234.3
344.5	191	Continental AG	193.5
890	515	DLW	609
955	550	Daimler-Benz	579
240	128.5	Deckel (Fr.)	160
588	270.5	Degussa	298.5
253.5	126.5	Deutsche Babcock	139.5
850	563.5	Deutsche Bank	610
285	150.2	Didier-Werke	165
929.5	711	Douglas Hldgs	845
380	258	Dragerwerk	269.8
472.5	331	Dresdner Bank	370.1
507	232.5	Fag Kugelfischer	245
373	220	Gerresheimer	302
750	472	Goldschmidt (TH)	670
232	163	Hamburg Elekt	168
518	328	Hapag Lloyd	360
1649.8	940	Heidelberger Zem	1,150
693.8	511	Henkel Pref.	578.5
396	212.8	Herlitz	355
1,583	970	Hochtief	1,227
319	177	Hoechst	192.2
371	199	Hoesch	220.5
1,779	1,057	Holzmann (P)	1,285
369	168	Horten	212.8
327	231	Industriekredit	232
495	258	Industrie Werke	309
280.5	132.5	Kali & Salz	134.8
756	565	Karstadt	661
700	496	Kaufhof	533
291	141.5	KHD	176
258.5	114	Kloeckner Werke	138
342	290	Kraft Werke Rh	299.5
1,280	850	Lahmeyer	1,098
875	625	Leifheit	732
1,059	702	Linde	792
234.5	101	Lufthansa	110
203	93	Do. N/V Pref.	105
545	315	MAN	375
419	259	Do. Pref.	320
405.5	224	Mannesmann	273.5
1084.5	779.5	Mannheimer Vers	835
799	457	Mercedes Hld	479
714.5	418.5	Metallgesell	422
2,920	1,750	Muench Rck (Reg)	2,250
367	204	PWA	215
580	508	Philips Kommun.	519.5
1,310	700	Porsche	720
491	280.5	Preussag	284
3,180	1,960	Rheinelektra	2,580
516	348	Rhein West Elect	426.5
415	280	Do. Pref.	346
460	284	Rheinmetall Berl	310
303	178	Do. Pref.	185.5
421	340	Rosenthal	360
856	559	Schering	727.5
322.5	168	Schmalbach-Lub	298
816.2	514.6	Siemens	597.8
885	607	Springer Axel Rg	708
825	560	Sud-Chemie	600
335	178	Thyssen	197
450	287	Varta	305
492	288.5	Veba	301.5
256.5	198.8	V.E.W	209.2
455	314	Verein-West	330
444	311	Viag	330
643	332	Volkswagen	337.7
543	284.5	Do. Pref.	294
783.5	609	Wella Pref	717
368	190	Zanders Fein'per	230

ITALY

1990 High	Low	November 30	Price Lire
5,949	3,941	Banca Com'le	3,995
9,510	5,010	Banca Naz Agric	5,340
7,944	5,700	Banca Lariano	5,850
381	225	Bastogi-IRBS	266
14,750	7,250	Burgo (Cartiere)	7,325
5,790	2,395	CIR	2,435
1,490	686	Caffaro	700
4,275	1,910	Cementir	1,916
6,199	2,990	Cigahotel	2,990
4,960	2,560	Cofide	2,570
3,039	2,080	Credito Italiano	2,120
12,930	7,050	Danieli	7,050
1,670	985	Eniment	1,522
10,365	7,051	Eridania	7,071
3,287	1,901	Ferruzzi Fin	2,050
11,320	5,169	Fiat	5,290
7,820	3,991	Do. Priv	4,090
8,478	5,445	Fidis	5,900
64,160	37,100	Fondiaria	37,510
2,450	1,521	Gemina	1,560
40,809	27,630	Generali Assicur	28,050
5,585	2,620	Gilardini Inds.	2,620
30,680	13,220	IFI Priv	13,670
11,000	4,600	Italcable	6,250
31,420	18,000	Italcementi	18,410
3,120	2,502	Italgas	2,550
18,400	11,280	Lloyd Adriatico	12,500
2,248	850	Magneti Marelli	850
22,500	12,358	Mediobanca	12,400
2,108	1,080	Montedison	1,331
7,699	3,030	Olivetti	3,070
11,400	5,050	Pirelli Co	5,130
3,125	1,501	Pirelli Spa	1,560
8,038	5,280	Rinascente La	5,340
28,250	16,570	RAS	16,850
1,892	1,053	SIP	1,081
11,741	7,030	Saffa A	7,170
3,600	1,701	Saipem	1,850
8,465	5,800	SASIB	6,450

ITALY (continued)

1990 High	Low	November 30	Price Lire
15,235	9,995	Sirti Spa	10,190
2,275	1,180	SMI	1,221
3,025	1,360	Snia BPD	1,425
2,840	1,610	STET	1,610
27,800	18,580	Toro Assicur	18,800
36,280	25,800	Tosi Franco	28,100
18,500	9,330	Unicem	10,100

NETHERLANDS

1990 High	Low	November 30	Price Fls.
36	30	ABN Amro Hldgs	30.80
42.5	30	ACF Holding	32.50
132.8	103.9	AEGON	106.80
148.4	111.8	Ahold	134.30
141.2	63.8	AKZO	68.20
63.1	43.6	AMEV	47.20
191	158	Bols Lucas	166.50
94	67.9	Borsumij Wehry	72.50
75.4	45.6	Buehrmann-Tet	45.60
91.2	72.7	Centrale Suiker	84.10
42.9	17.5	DAF	17.70
126.4	76.7	DSM	80.60
141.1	119.5	Dordtsche Petroleum	127.20
96.8	70.3	Elsevier Dp Rcts	75.00
53.5	32.3	Fokker	34.50
104.8	78	Gamma	90.00
35.4	22	Gist Brocades	27.20
134.2	102	Heineken	128.30
219	149.5	Holl. Beton	152.00
89.9	49	Hoogovens	52.60
111.5	56	Hunter Douglas	57.80
57	36.1	IHC Calland	52.70
106.5	57.9	Int Mueller	77.50
50.2	18.9	KLM	19.50
17.8	8.5	Kempen	9.50
53.5	35.1	KNP	35.6
54.5	37.4	NMB Postbank	41.30
76	47.7	Nat Ned Cert	50.20
107.8	36.6	Nedlloyd	36.60
117.5	77	Nijverdal-Ten Ct	77.50
117.5	76.5	Nutricia Ver B	110.20
63.5	36	Oce Grinten	36.00
46.8	34	Ommeren (Van)	43.70
225.5	143.2	Pakhoed	191.50
47.4	18.8	Philips	21.50
37.8	29.3	PolyGram	31.20
110.8	83	Robeco	85.70
82	48.3	Rodamco	48.30
109.8	77.6	Rolinco	79.50
60.3	57.1	Rorento	60.00
154.7	126.7	Royal Dutch	134.80
164.9	134.6	Unilever	144.70
59.6	41.4	VMF Stork	42.40
113.5	73.7	VNU	84.60
76.2	53.9	Wessanen	60.70
56	43.7	Wolters Kluwer	48.10

NORWAY

1990 High	Low	November 30	Price Kroner
205	84	Aker A (Free)	99.00
231	107	Bergesen A	127.00
184	78	Chr'stiania Bk Free	90.00
152	130	Den norske Bk Free	147.00
170	91	Dyno Ind.	108.00
322.5	115	Elkem (Free)	135.00
230	135	Hafsl Nyco A Free	154.00
360	203	Kvaerner (Free)	230.00
395	250	Nora Ind A Free	250.00
56	30	Norsk Data A	42.00
254.5	160	Norsk Hydro	196.00
184	111	Norske Skog A Fr	130.00
285	180	Orkla Borr (Free)	212.5
189	81	Saga Pet A Free	137.0
193	84	Saga Pet B Free	139.0
158	105	Storebrand (Free)	125.00
182.5	68	Vard AS A	71.00

SPAIN

1990 High	Low	November 30	Price Pts.
3,895	2,415	Banco Bilbao Viz	2,560
5,100	3,995	Banco Central	4,560
3,430	3,060	Banco Exterior	3,415
3,910	2,150	Banco Hispano	2,675
10,000	6,800	Banco Popular	8,850
5,842	3,650	Banco Santander	4,520
4,975	2,700	Banesto	3,350
5,300	3,300	Bodegas Bebidas	3,800
13,360	4,600	Citroen Hispania	6,500
8,350	4,310	Corp Fin Alba	5,690
8,910	3,545	Corp. Mapfre	4,080
3,091	2,073	Dragados	2,435
3,600	1,900	Ebro	2,300
3,250	2,440	Electra Viesgo	3,185
2,590	1,770	Endesa	2,080
2,270	892	Energia Ind Ara	1,080
1,841	595	Ercros	605xr
8,250	3,030	Esp Carburos Mt	4,500
1,550	790	Esp Acum Tudor	980
5,100	3,000	Fasa Renault	3,000
690	440	Fecsa	565
1,910	1,390	Hidroel Cantab.	1,490
580	381	Hidrola	413
732	540	Iberduero	625
5,200	2,900	Koipe	2,910
1,650	1,000	Metal Duro-Felg	1,195
2,460	1,460	Petroleo (Cia Esp)	1,925
26,450	13,000	Portland Vald.	18,650
2,925	2,010	Repsol	2,020
885	261	SNIACE	261
1,670	571	Sarrio	571
648	411	Sevillana Elec.	473
4,445	2,715	Tabacalera	3,590
970	765	Telefonica	827
603	427	Union Elec-Fen.	504
11,300	4,900	Union y el Fenix	6,000
3,870	1,485	Uralita	1,675
2,350	1,195	Urbis Ser.2	1,445
3,820	1,890	Vallehermoso	2,090

SWEDEN

1990 High	Low	November 30	Price Kroner
320	225	AGA B (Free)	260
284	160	Alfa-Laval B (Free)	165
850	463	Asea B (Free)	485
560	357	Astra A (Free)	479
600	373	Astra B (Free)	485
380	143	Atlas Copco A (Free)	165
311	124	Electrolux B (Free)	142
233	136	Ericsson B (Free)	188
235	100	Esselte B (Free)	100
173	115	Gambro B Free	136
340	152	Mo Och Dom B Free	185
235	60	Nobel Free	70
188	118	Procordia B (Free)	142
288	125	Saab-Scania B Free	130
356	185	Sandvik B (Free)	195
228	125	Skandia (Free)	127
91.5	54	Skan Enskilda C	55.5
184	67.5	SKF B Free	73
377	185	Stora Kopp B Free	200
130	69.5	SCA B (Free)	76
90	87	Svka Hndl B Fr	89
190	94	Trelleborg B Fr	105
453	196	Volvo B (Free)	214

SWITZERLAND

1990 High	Low	November 30	Price Frs.
2030.0	830.0	Adia Intl (Br)	890
276.0	89.0	Do Ptg.Certs.	91
1,590	858	Alusuisse Lonza	911
133	69	Do. Ptg. Certs.	72
2,560	1,735	Baloise Hld Ptg	2,060
6,310	3,840	Brown Bov (Br)	3,950
1,200	683	Do Ptg	700
2,710	1,570	CS Hldgs	1,650
3,820	2,270	Ciba Geigy (Br)	2,360
3,230	1,865	Do. (Reg)	2,020
3,080	1,825	Do. (PtCts)	1,950
3,540	2,800	Elektrowatt	3,200
2,350	1,600	Elvia	1,750
2,390	1,290	Fischer (Geo.)	1,290
413	193	Do Ptg.	201
2,940	1,740	Forbo	1,975
7,375	3,800	Holderbank (Br)	3,850
5,900	4,600	Holzstoff (Br)	4,800
2,350	1,400	Jelmoli	1,450
465	270	Do. Ptg. Certs	280
1,575	925	Landis and Gyr	960
147	83	Do Priority Ptg	85
3,365	1,050	Leu Hldgs (Br)	1,090
415	175	Do. Ptg	175
990	725	Mag. Globus Ptg	780
640	396	Mikron (Reg)	460
1,845	1,305	Motor-Columbus	1,315
9,240	6,960	Nestle	7,420
9,185	6,640	Do. (Reg)	7,000
1,115	410	Oer-Buhrle	425
1,880	995	Pargesa Hldg	1,040
500	348	Pirelli	350
9,850	6,800	Richemont	7,600
8,540	6,000	Roche Hldgs (Br)	6,440
4,555	3,240	Do (Genuss)	3,680
12,400	8,500	Sandoz (Br)	8,870
2,370	1,540	Do (PtCts)	1,750
7,750	4,500	Schindler (Br)	4,500
1,425	770	Do. (PtCts)	780
1,020	700	Sika	725
8,625	5,062	Surveillance (Br)	6,290
1,300	555	Swissair	580
356	260	Swiss Bank (Br)	271
294	219	Do. Ptg.	224
4,000	2,450	Swiss Reinsce	2,800
658	431	Do. Ptg.	508
1,865	1,025	Swiss Volksbk	1,095
4,180	2,580	Union Bank (Br)	2,710
151	103	Do. Ptg.	110
4,600	3,200	Winterthur	3,680
814	574	Do. Ptg.	671
5,450	3,470	Zurich Ins	3,920
2,360	1,600	Do. Ptg	1,825

SOUTH AFRICA

1990 High	Low	November 30	Price Rand
18.75	11	AECI	11
82.5	55	Allied Tech	72.5
100	70	Anglo Am Coal	80
147.75	89.5	Anglo Am Corp	92
412	229	Anglo Am Gold	235.75
54.5	29.75	Barlow Rand	34
72.25	46.5	Buffels	50
16.5	10.2	CNA Gallo	16.5
107	60	De Beers/Centen'y	64.75
21	8	Driefontein	8.6 (Doelkraal Gold)
57.75	36.25	Driefontein	38.1
19.75	6.5	East Rand Gold	7.1
40.5	20.25	Elandsrand Gold	26
30.75	23	First Nat. Bank	30.75
59	29	Free State Cons Gold	31
110.5	58.5	Gold Fields SA	60
36.5	18.25	Hartebeest	19
19.5	11.75	Highveld Steel	12.5
2.84	1.65	ISCOR	1.68
78	47	Kinross Gold	60
46.75	30.5	Kloof Gold	31.45
11	2.2	Libanon Gold	2.2
22.5	12.25	Micor	15.5
12.5	8.75	Nedcor	10.2
20	13	OK Bazaars	13
82.5	47.5	Palabora Mining	62.5
15.75	12.2	Rembrandt	13.8
92	56	Rust Plat	56
50	30	Safmarine & Ren.	40.5
10.55	6.25	Sage Holdings	6.5
41	26.5	Smith (CG) Fds	32.75
42	29.75	SA Brewers	39
31	15.25	SA Mang Amcor	20.5
30	20.25	Tiger Oats	25.5
20.25	12.5	Tongaat Hulett	12.75
451	213.5	Vaal Reefs	214
195	102	Western Deep	111.5

JAPAN

1990 High	Low	November 30	Price Yen
2,840	1,250	Ajinomoto	1,470
1,200	630	Akebono Brake	650
2,160	1,010	All Nippon Air	1,210
2,510	1,310	Alps Electric	1,330
2,230	1,030	Amada	1,060
2,550	1,610	Amano	1,720
1,790	929	Ando Construct	1,280
2,960	1,280	Anritsu	1,430
1,450	615	Aoki Corp	771
14,900	4,850	Arabian Oil	6,950
2,100	1,050	Asahi Breweries	1,140
1,240	673	Asahi Chemicals	675
2,380	1,040	Asahi Glass	1,240
1,150	483	Asahi Optical	570
1,010	416	Asics Corp	450
1,417	772	Atsugi Nylon	945xr
1,720	750	Banyu Pharm	1,100
1,740	998	Bridgestone	1,000
1,070	530	Brother Inds	600
6,800	3,650	CSK Corp	3,990
1,770	925	Calpis Food	925
1,300	510	Calsonic Corp	510
1,940	1,240	Canon	1,250
5,170	3,500	Canon Sales	3,710
1,740	940	Casio Computer	940
1,360	506	Central Finance	506
1,020	490	Central Glass	490
1,700	790	Chiba Bank	805
2,690	981	Chiyoda Chem	1,420
1,410	634	Chiyoda Fire	790
4,970	2,000	Chubu Elect Pwr	2,570
2,150	986	Chugai Pharm	1,080
3,990	1,740	Chugoku El Power	2,120
1,200	725	Citizen Watch	805
1,140	632	Daicel Chemical	699
2,980	1,970	Daiichi Seiyaku	2,280
1,250	494	Daido Steel	543
3,050	1,140	Daiei	1,220
2,910	1,690	Daifuku	2,370
3,180	1,600	Dai Ichi Kan Bank	1,850
2,160	1,400	Daikin Inds	1,500
4,350	1,600	Daikyo Kanko	1,640
1,770	811	Daimaru	835
947	435	Dai Nippon Ink	435
3,290	1,710	Dai Nippon Phar	2,020
2,390	1,280	Dai Nippon Ptg	1,480
1,070	455	Dai Nippon Toryo	470
3,480	2,950	Daishowa Paper	3,000
1,550	590	Dai Tokyo F&M	790
1,720	1,040	Daiwa Bank	1,170
2,770	1,630	Daiwa House	1,780
2,360	895	Daiwa Sec	1,020
5,880	2,870	Denny's	3,230
1,470	570	Dowa Fire & Mar	730
1,550	490	Dowa Mining	551
2,230	1,130	Ebara	1,310
2,320	1,430	Eisai	1,890
1,650	874	Ezaki Glico	990
8,590	4,200	Fanuc	4,350
1,550	810	Fudo Construct	876
3,610	1,640	Fuji Bank	2,170
1,260	700	Fuji Electric	732
4,500	3,227	Fuji Film	3,330
1,630	800	Fuji Fire & Mar	975
949	440	Fuji Heavy Ind	482
1,320	590	Fujikura	715
2,390	1,270	Fujisawa	1,490
937	480	Fuji Spinning	595
5,070	2,500	Fujita Tourist	2,600
1,640	940	Fujitsu Ltd	940
1,160	540	Furukawa Elect	605
3,370	1,200	Gakken	1,340
1,930	830	Gen Sekiyu	870
2,420	829	Godo Shusei	950
2,280	950	Green Cross	1,060
1,760	1,020	Gun-Ei Chem	1,050
1,370	660	Gunze	720
1,408	575	Hankyu Corp	590
1,280	440	Hanshin El Rail	476
1,650	741	Haseko	741
6,080	4,300	Hattori Seiko	4,300
1,540	695	Hazama-Gumi	1,050
2,310	881	Heiwa Real Est	949
1,300	780	Hino Motors	900
7,460	4,860	Hirose Electric	5,000
1,360	840	Hiroshima (Bank)	870
1,710	1,030	Hitachi	1,030
1,320	801	Hitachi Cable	870
2,000	1,000	Hitachi Credit	1,250
2,420	1,120	Hitachi Koki	1,120
3,620	1,870	Hitachi Maxell	1,950
1,740	1,090	Hitachi Metals	1,170
1,400	665	Hitachi Sales	690
914	390	Hitachi Zosen	395
4,100	1,750	Hokkaido Elect	2,220
1,600	705	Hokkaido Takush	710
4,190	1,790	Hokuriku El Pwr	2,210
1,910	1,240	Honda	1,330
4,990	1,340	Honshu Paper	2,140
2,770	1,460	House Food Ind	1,780
3,430	2,020	Hoya	2,110
1,480	500	IHI	615
1,350	536	Inara Chemical	636
2,200	1,070	Ikegami Tsush	1,120
1,960	1,080	Inax	1,170
6,520	2,180	Indl Bank Japan	2,800
1,300	660	Iseki & Co.	660
4,850	2,380	Isetan	2,380
940	464	Ishihara Sangyo	480
1,160	445	Isuzu Motors	517
1,290	562	Itoh (C)	620
1,530	780	Itoham Foods	800
1,620	583	Itoman & Co	583
4,680	3,100	Ito Yokado	3,580
1,320	680	Iwatsu Electric	739
4,030	1,860	Izumiya	2,100
3,180	1,750	JGC Corp	1,810
1,590	830	JEOL	1,010
5,000	2,630	Janome Sew Mach	2,630
1,920	931	JAL	981

1990 High	Low	November 30	Price Yen
2,180	845	Japan Metals	845
3,030	1,850	Japan Radio	1,990
1,150	495	Japan Steel Wks	495
1,350	611	Jap S Battery	611
1,480	573	Japan Synth Rbr	590
3,240	1,130	Japan Wool	1,450
1,180	490	Jujo Paper	545
3,030	1,180	Jusco	1,400
1,990	1,370	Kagome	1,390
2,180	1,230	Kajima	1,400
2,609	1,120	Kaken Pharm	1,170
4,260	2,030	Kandenko	2,730
932	455	Kanebo	505
1,150	562	Kanegafuchi Chm	600
1,380	571	Kanematsu Corpn.	580
4,960	2,090	Kansai Elect Power	2,560
1,520	530	Kansai Paint	611
1,714	1,160	Kao Corp	1,220
1,100	420	Kawasaki Heavy	445
1,150	391	Kawasaki Kisen	407
829	388	Kawasaki Steel	405
1,800	650	Keihin Elec Exp	773
1,650	598	Keio Teito Elec	759
1,720	710	Kikkoman	975
3,810	2,160	Kinden	2,840
1,540	683	Kinki Nippon Rl	734
2,040	1,280	Kirin Brewery	1,420
824	443	Kobe Steel	443
3,800	2,800	Koito Mfg	3,250
5,400	2,680	Kokusai Electric	2,940
5,110	2,800	Kokuyo	3,140
1,380	910	Komatsu	930
1,750	886	Konica	886
4,750	2,500	Korakuen	2,990
1,560	865	Koyo Seiko	865
1,280	560	Kubota	655
1,450	660	Kumagai-Gumi	701
1,430	600	Kureha Chemical	600
1,900	550	Kurabo Inds.	1,120
1,810	1,110	Kuraray	1,190
1,120	570	Kureha Chemical	570
2,710	1,630	Kurita Water	2,280
1,370	600	Kurosaki Refrac	630
9,320	5,300	Kyocera	5,500
1,070	490	Kyodo Shiryo	580
2,440	1,500	Kyotaru	1,640
1,500	710	Kyowa Bank	1,030
1,850	920	Kyowa Hakko	999
4,050	1,740	Kyushu Electric	2,180
1,290	570	Lion	610
2,510	1,140	Long Term Cred	1,140
2,220	1,170	Maeda Corp	1,770
1,920	1,070	Makino Milling	1,070
3,060	1,380	Makita Elect Wk	1,380
1,170	535	Marubeni	570
1,700	865	Marudai Food	965
3,640	2,170	Marui	2,170
2,450	1,400	Maruichi Steel	1,610
2,390	1,560	MEI	1,570
2,133	1,343	Matsu Elect Wks	1,510xr
2,920	1,480	Matsushita Koto	1,580
1,870	960	Matsushita Refrig	1,030
1,000	530	Mazda Motors	530
1,130	530	Meiji Milk	645
1,220	570	Meiji Seika	655
1,530	764	Mercian Corp	960
3,610	2,200	Mikuni Coca Cola	2,590
1,260	680	Minebea	696
1,150	576	Minolta Camera	581
3,230	1,510	Misawa Homes	1,620
3,210	1,470	M'bishi Bank	1,860
1,990	1,120	M'bishi Corp	1,190
1,150	597	M'bishi Elec	600
2,470	1,050	M'bishi Estate	1,200
1,060	501	M'bishi Gas Chem	501
1,160	623	MHI	623
1,100	461	M'bishi Kasei	477
1,200	501	M'bishi Metal	501
980	415	M bishi Mtn Cmt	415
1,700	640	M'bishi Oil	765
1,300	505	M'bishi Paper	570
1,480	615	M'bishi Petchem	670
1,130	580	M'bishi Plastics	614
896	414	M'bishi Rayon	431
2,510	970	M'bishi Steel	1,170
3,030	1,120	M'bishi Tst	1,460
2,300	1,060	M'bishi Warehse	1,400
1,690	768	M'boshi Belting	801
1,380	610	Mitsui Co.	650
1,010	400	Mitsui Eng Ship	439
992	415	Mitsui Mng & Sm	415
1,160	410	Mitsui Osk Line	458
1,720	650	Mitsui Petchem	650
2,860	1,140	Mitsui Real Estate	1,180
2,690	1,170	Mitsui Taiyo Kobe	1,650
1,000	365	Mitsui Toatsu	427
2,050	1,040	Mitsui Tst & Bkg	1,320
1,900	729	Mitsui Warehse	1,020
2,720	1,020	Mitsukoshi	1,180
2,350	1,040	Mitsumi Elect	1,250
1,240	599	Miyaji Iron Wks	655
2,020	1,280	Mizuno Sporting	1,600
5,070	2,000	Mochida Pharm	2,600
1,050	478	Morinaga Milk	527
4,600	2,400	Mori Seiki	2,590
3,570	1,850	Murata Mfg	2,090
2,250	1,240	NEC	1,240
1,730	980	NGK Insulators	1,110
1,730	831	NGK Spark Plug	831
1,030	476	NHK Spring	476
785	350	NKK Corp.	353
1,640	737	NOK Corp.	742
1,220	620	NTN Toyo Brg	640
1,230	585	Nachi Fujikoshi	670
6,360	3,230	Nagasakiya	3,850
1,610	870	Nagase	945
1,500	540	Nagoya Railroad	601
2,250	979	National House	1,030
3,080	1,370	Nichii	1,380
1,460	650	Nichirei	755
1,220	712	Nihon Cement	889
1,150	425	Nihon Nosan	511

1990 High	Low	November 30	Price Yen
1,790	870	Nihon Parkeriz.	950
1,050	500	Niigata Eng	529
1,880	747	Nikko Sec	869
1,750	969	Nikon Corp.	1,030
18,400	8,100	Nippon Cred Bnk	8,710
1,220	470	Nippon Denko	616
2,510	1,590	Nippon Denso	1,640
3,830	1,370	Nippon Elect Gl	1,400
1,720	550	Nippon Express	680
1,780	360	Nippon Fire	748
1,150	498	Nippon Flour	609
3,830	1,990	Nippon Hodo	2,430
1,500	661	Nippon Kayaku	804
1,200	574	Nippon Lt Metal	826
2,290	1,090	Nippon Meat Pack	1,230
1,130	435	Nippon Mining	440
1,910	790	Nippon Oil	895
1,370	610	Nippon Paint	615
2,250	1,280	Nippon Road	1,440
1,110	490	Nippon Sanso	589
1,390	700	Nippon Seiko	705
1,930	900	Nippon Sharyo	1,070
1,230	525	Nippon Sh Glass	540
1,720	710	Nippon Shinpan	770
2,200	1,240	Nippon Shinyaku	1,400
1,320	525	Nippon Soda	665
1,330	660	Nippon Stainless	710
791	372	Nippon Steel	390
1,040	475	Nippon Suisan	505
37,400	21,900	Nippon TV	22,000
1,250	453	Nippon Yakin	520
1,200	480	Nippon Yusen	480
1,170	470	Nippon Zeon	550
1,520	738	Nishimatsu Cons	1,150
1,230	525	Nissan Diesel	525
1,480	705	Nissan Motor	710
3,080	1,500	Nissei Sangyo	1,600
1,980	1,020	Nisshin Flour	1,350
1,460	898	Nisshin Oil	960
1,870	835	Nisshinbo Inds.	990
1,230	519	Nissho Iwai	521
1,660	940	Nissin Electric	1,120
4,290	1,940	Nissin Food	2,120
1,720	762	Nitsuko	900
969	431	Nitto Boseki	508
2,320	920	Nitto Denko	1,010
3,430	1,380	Nomura	1,630
1,910	1,090	Noritake	1,380
1,760	730	Odakyu Elec Rly	824
1,760	1,000	Ohbayashi-Gumi	1,050
1,730	680	Oji Paper	710
1,240	598	Oki Electric	598
1,930	1,210	Okuma Mach	1,260
2,050	1,040	Okumura-Gumi	1,430
1,710	950	Olympus	962
3,670	1,620	Omron Corp.	1,700
1,110	495	Onoda Cement	530
6,340	3,320	Ono Pharm	4,900
2,380	1,660	Orient Kashmann	1,700
1,860	892	Orient Corp	900
6,770	2,110	Orix Corp	2,880
887	362	Osaka Gas	425
1,420	592	Penta Ocean Con	822
6,800	3,270	Pioneer	3,690
1,130	466	Prima Meat Pack	665
1,380	680	Renown	715
1,330	708	Ricoh	708
3,270	1,750	Royal Co	1,750
1,100	540	Ryobi	615
1,870	870	Saitama Bank	972
1,440	720	Sanden	725
2,920	1,970	Sankyo	2,400
8,990	4,300	Sanrio	4,450
2,770	1,450	Sanwa Bank	1,790
2,700	1,200	Sanwa Shutter	1,400
1,060	539	Sanyo Elect	539
1,100	420	Sanyo Kokusaku	459
2,040	1,000	Sapporo	1,290
7,000	3,780	Secom	4,680
7,790	3,100	Seibu Railway	3,330
2,660	1,620	Seino Transport	2,130
2,670	1,340	Seiyu Food Svs	1,460
3,120	1,210	Seiyu	1,570
1,770	1,030	Sekisui Chem	1,080
2,450	1,280	Sekisui House	1,320
1,380	706	Settsu	715
11,000	5,400	Seven-Eleven	6,840
1,960	1,090	Sharp	1,090
3,920	1,780	Shikoku El Pwr	2,150
2,220	1,400	Shimizu Corp.	1,400
2,040	1,040	Shin-Etsu Chem	1,180
1,810	953	Shionogi	1,030
2,520	1,750	Shiseido	1,800
5,740	2,800	Shochiku	3,550
1,470	654	Showa Denko	666
1,230	725	Showa Aluminium	725
1,090	400	Showa Denko	415
1,280	514	Showa Elec Wire	598
1,060	510	Showa Sangyo	530
1,750	930	Showa Shell Sek	1,000
3,630	1,880	Skylark	2,470
1,400	657	Snow Brand Milk	712
9,080	5,500	Sony	5,780
1,260	675	Stanley Electric	675
968	475	Sumitomo B'lite	492
3,630	1,570	Sumitomo Bank	1,770
943	445	Sumitomo Cement	473
925	390	Sumitomo Chem	420
1,730	957	Sumitomo Corp	980
1,790	1,140	Sumitomo Elect	1,270
1,110	450	Sumitomo Heavy	466
939	484	Sumitomo Light M	530
1,570	650	Sumitomo Marine	899
845	388	Sumitomo Met In	390
2,270	1,020	Sumitomo Met Mng	1,020
2,110	895	Sumitomo Realty	900
2,800	1,090	Sumitomo Tr & Bk	1,500
1,470	570	Sumitomo W'hse	650
1,020	535	Suzuki Motor	668
7,590	4,140	TDK	4,150
1,580	820	Taisei Corp	915

1990 High	Low	November 30	Price Yen
1,570	617	Taisho Marine	935
2,800	1,650	Taisho Pharm	2,150
984	416	Taiyo Fishery	424
1,450	685	Takaoka Elect.	890
1,160	558	Takara Shuzo	722
4,100	2,000	Takashimaya	2,290
2,400	1,240	Takeda	1,600
1,790	855	Tanabe Seiyaku	870
979	490	Teijin	492
1,840	961	Teikoku Oil	1,010
1,900	787	Tekken Constr.	1,130
1,280	574	Toa	785
1,890	830	Tobishima	875
1,680	610	Tobu Railway	687
1,880	695	Toei Co.	904
51,300	22,900	Toho	25,700
4,030	1,760	Tohoku Electric	2,190
2,580	1,070	Tokai Bank	1,340
1,190	491	Tokai Carbon	569
1,250	510	Tokico	565
2,130	946	Tokio Marine	1,240
1,040	475	Tokuyama Soda	481
1,970	891	Tokyo (Bank)	1,090
3,320	1,980	Tokyo B'casting	2,190
6,050	2,700	Tokyo Electric Pwr	3,130
4,025	2,370	Tokyo Electron	2,370
1,140	449	Tokyo Gas	494
1,610	923	Tokyo Rope	980
5,870	3,130	Tokyo Steel	3,180
2,990	1,520	Tokyo Style	1,550
3,750	1,300	Tokyu Car	1,430
2,650	1,000	Tokyu Corp	1,000
1,500	500	Tokyu Land	500
2,230	1,040	Tonen Corp	1,370
2,270	1,260	Toppan Print	1,350
1,030	555	Toray	575
1,310	680	Toshiba Elect	680
1,750	970	Toshiba Eng Con	1,400
1,440	810	Toshiba Machinery	810
1,930	1,140	Toshoku	1,270
940	411	Tosoh Corp	480
2,800	1,460	Toto	1,650
1,270	600	Toyo Construct	665
3,370	2,200	Toyoda Aut Loom	2,260
1,030	491	Toyo Ink	505
1,790	853	Toyo Jozo	1,000
1,470	590	Toyo Kanetsu	590
5,390	3,100	Toyo Seikan	4,410
2,610	1,730	Toyota Motor	1,760
1,850	615	Toyo Tire	615
1,300	611	Tsubakimoto Chn	699
1,480	562	Tsugami	562
890	450	UBE Inds	525
889	390	Unitika	420
3,060	1,350	Victor (JVC)	1,430
1,720	908	Wacoal	1,020
2,190	1,370	Yamaha Corp	1,620
1,430	736	Yamaha Motor	755
1,880	770	Yamaichi Sec	850
3,580	2,340	Yamanouchi	2,780
3,150	1,390	Yamatake H'ywell	1,500
2,450	1,500	Yamato Kogyo	1,650
1,860	919	Yamato Trans	1,070
2,290	1,300	Yamazaki Baking	1,380
1,700	621	Yasuda Fire	879
1,300	556	Yasukawa Elect.	593
1,840	1,070	Yokogawa Elect	1,150
1,100	940	Yokohama Bank	970
1,460	820	Yokohama Rubber	913
4,300	1,430	Yomiuri Land	1,500
1,960	1,050	Yoshitomi Pharm	1,420
1,630	840	Yuasa Battery	905
1,240	572	Zexel Corp	665

AUSTRALIA

1990 High	Low	November 30	Price Aust$
1.96	0.9	AFP	0.98
1.12	0.18	AWA	0.18
5.26	3.65	Aberfoyle	3.70
6.56	0.35	Adelaide Steams	0.35
4.48	3.46	Amcor	3.86
3	2.05	Ampol Expl	2.35
6	4.62	Arnotts	5.00
1.81	1.2	Ashton	1.38
6.38	3.4	ANZ Group	3.40
2.1	1.5	Aust. Gas Light	1.90
1.91	1.45	Aust Nat Inds	1.85
11.5	8.74	BHP	10.60
0.68	0.35	BHP Gold	0.46
3.29	2.34	BTR Nylex	2.63
4.01	2.92	Boral	3.11
1.47	0.75	B'ville Copper	0.75
15.15	12.1	Brambles Inds.	13.75
1	0.66	Bridge Oil	0.78
1.6	0.88	Brierley Invs	0.88
4.48	2.9	Bundaberg Sugar	2.90
3.75	2.17	Burns Philp	2.55
13.4	9.3	CRA	9.78
5.7	4.43	CSR	4.43
2.75	2.04	Caltex Aust.	2.30
10.05	7.2	Coal Allied Ind	7.30
12.8	9.42	Coca Cola AmatiI	10.35
8.5	7.12	Coles Myer	8.34
4.45	3.69	Comalco	3.75
1.15	0.73	Crusader	0.78
2.09	0.75	Dominion Mng	0.85
3.95	2.56	Email	2.75
2.32	1.5	Energy Res	1.51
2.83	1.26	FAI Insurances	1.26
3.48	2.51	Fletcher Chllnge	2.54
2.42	1.1	Fosters Brewing	1.39
2.9	2.48	Gen Prop Trust	2.60
1.93	1.19	Goodman Fielder	1.33
2.75	1.95	Hardie (J)	2.30
1.4	0.76	Highlands Gold	1.10
6.26	3.15	ICI Aust	3.35
2.25	0.95	Jennings Group	1.03
12.4	1.25	Jones (David)	1.25

AUSTRALIA (continued)

1990 High	Low	November 30	Price Aust$
3.8	2.1	Kidston Gold	2.14
14.95	12.2	Lend Lease	14.30
2.62	1.81	MIM	1.81
6.8	5	Mayne Nickless	5.60
2.95	1.66	Metal Manuf	1.66
1	0.43	Minproc Hldgs	0.47
6.94	5.56	Nat.Aust. Bank	5.74
1.28	0.83	Newmont Aust.	0.95
14.85	4.39	News Corp	6.20
3.04	1.99	N Bkn Hill Peko	2.00
5.5	4.15	Pacific Dunlop	4.86
2.4	1.7	Pancont'l	1.85
2.5	1.51	Pasminco	1.53
2.66	1.66	Pioneer Intl	1.96
3.85	2.58	Placer Pacific	3.22
3.12	1.4	Poseidon	1.70
1.8	1.2	QCT Resources	1.30
9.86	7	Renison Gldfids	7.14
11.2	7.5	Rothmans Aust.	10.15
2.73	2.13	SA Brewing	2.40xr
5.24	4.06	Santos	4.38
6.1	3.6	Smith (H.)	3.89
2.1	1.78	Stockland Tst	1.85
2.97	1.54	TNT	1.63
4.4	2.6	Wesfarmers	2.78
6.86	4.06	Western Mining	4.06
2.45	1.92	Westfield Hldg	2.45
1.84	1.53	Westfield Tst	1.83
6.1	3.7	Westpac	3.94
3.5	2.7	Woodside Petrol	2.94
3.34	2.22	Wormald Intl	2.70

HONG KONG

1990 High	Low	November 30	Price H.K.$
3.62	2.45	Amoy Props.	3.40
16	12.7	Bank East Asia	14.20
10.6	6.8	Cathay Pacific	6.80
14.3	9.4	Cheung Kong	12.40
15.9	11.9	China Light	15.20
29.3	21	China Motor	23.80
15.8	13.4	Cross H'bour Tnl	14.10
10.8	7.8	Dairy Farm Intl	10.00
2.05	1.17	Dao Heng Hldgs	1.36
4.1	2.52	Evergo	2.85
6.35	3.48	Hang Lung	5.30
22.7	16.5	Hang Seng Bank	22.10
9.4	6.6	Harbour Centre	7.40
2.5	1.69	Henderson Inv.	1.87
8.95	6.05	Henderson Land	8.20
22.4	13.1	HK Aircraft	13.20
12.8	8.9	HK China	9.55
9.95	7.5	HK Electric	9.85
9.3	7.1	HK Land	7.40
5.3	4.17	HK Realty & Tr A	4.25
7	4.52	HK Shanghai Bank	4.72
5.45	3.7	HK Shanghai Hotels	3.87
6.8	5.2	HK Telecomms.	5.70
3.87	2.5	Hopewell Hldgs	3.17
13.2	7.95	Hutchison Wpa	11.80
1.44	1.06	Hysan Dev	1.16
11.9	7.15	Indust. Equity P	7.15
4.65	2.7	Jardine Int Mtr	2.70
37.25	22.9	Jardine Math	30.00
18.4	13.2	Jardine Strtgic	15.10
7.05	5.3	Kowloon Motor	5.50
6.3	4.25	Mandarin Orient	4.82
12.7	7.85	New World Dev	8.10
7.8	5.75	Realty Dev A	6.75
16	12.2	SHK Props	14.50
5.05	3.52	Shaw Bros.	3.75
2.7	1.18	Shell Elec. Mfg	1.33
4.55	2.5	Sime Darby	3.70
2.97	1.74	Sun Hung Kai Co	1.75
22.4	14.1	Swire Pac A	14.40
3.8	2.5	Do. B	2.50
9.9	5.8	Tele B'cast	6.45
9.4	6.55	Wharf Hldgs	7.65
8.05	5.7	Wing On Co	6.75
9.2	6.8	Winsor Ind	7.00
4.72	3.02	World Intl Hldgs	3.60

MALAYSIA

1990 High	Low	November 30	Price MYR
3.04	2.2	Boustead Hldgs	2.20
16.4	10.8	Genting	13.80
8.4	4.04	Hong Leong Cred	4.10
10.7	5.3	Malayan Banking	5.30
3.34	1.65	Malayan Utd Ind	1.65
1.82	0.92	Multi Purpose	0.93
2.4	1.26	Public Bank	1.29
4.88	3.5	Sime Darby	3.80

SINGAPORE

1990 High	Low	November 30	Price S$
2.87	1.32	Cold Storage	2.00
13.9	8.5	DBS	9.30
10.4	6.4	Fraser & Neave	6.50
3.14	1.88	Haw Par Bros	1.89
6	3.58	Inchcape Bhd	3.58
8.15	4.78	Keppel Corp	4.92
13.4	6.6	OCBC	7.55
5.9	3.82	OUB	4.20
21.8	11.5	S'pore Air Free	11.50
8.65	6.25	Singapore Press	7.05
3.92	2.35	Straits Trading	2.39
3.96	2.91	Tat Lee Bank	3.12
7.1	4.96	UOB	5.35

NOTES—Prices on this page are as quoted on the individual exchanges and are last traded prices. (u) unavailable. # Dealings suspended. xd Ex dividend. xc Ex scrip issue. xr Ex rights. xa Ex all.
† Belgium prices unavailable.

CANADA

TORONTO
Closing prices November 30

Quotations in cents unless marked $.

Sales	Stock	High	Low	Close	Chng
713	Abitibi Pr	$12¾	12⅝	12⅝	-⅛
38800	Agnico E	$8¼	8	8⅛	
21233	Albrta En	$17	16⅞	16⅞	+⅛
2492	Albrta N	$13	12⅞	12⅞	-⅜
360615	Alcan	$20½	20	20½	+⅜
136	Algo Cent	$9	9	9	-½
157150	A Barrick	$22⅞	22⅝	22⅝	-⅜
5572	Atco I f	$10⅜	10⅜	10⅜	
286584	BCE Inc	$39⅜	39	39⅜	+⅛
42245	BCE D	14	13	13	+1
55460	BCE Mobl	$16⅞	16½	16⅞	+¼
3970	BC Sugar A	$14½	14¼	14¼	-⅛
3300	BGR A	$8⅛	8	8	-⅛
21966	BP Canada	$16⅛	15⅞	15⅞	+¼
209078	Bk Montl	$28⅛	27⅞	28	
720044	Bk NScot	$11⅛	10¾	10⅞	-⅛
7500	Baton	$6	5⅞	5⅞	
96000	Belmoral	22	18½	22	+2
882	Bombdr A	$15¾	15⅝	15¾	+½
84050	Bombdr B	$13⅞	13½	13⅞	+⅜
39820	Bow Valy	$14¾	14½	14¾	+⅛
23000	Bramalea	$6⅛	6	6¼	
19800	Brascan A	$14¾	14⅛	14¾	+⅝
42400	Briwater	80	75	75	-7
24854	BC Phone	$18¾	18⅝	18¾	+⅛
6953	Bruncor	$17	16¾	16⅞	
200	Brunswk	$8	8	8	
122760	CAE	$5⅛	495	5	
1487	CCL B f	$7¼	7⅛	7⅛	-⅛
5200	Cambior	$11	10¾	10¾	-¼
98311	Cambridg	$24½	24	24½	+½
4081	Camp Res	48	40	40	-8
500	Camp Soup	$20½	20½	20½	
18600	Campeau f	58	55	55	-3
4100	C Nor West	115	105	105	-10
835	C Packrs	$10	9⅞	10	+⅛
24029	C Exprss f	14	13½	14	
462854	CI Bk Com	$25⅛	24⅞	25	-⅛
400	C Marconi	$9½	9½	9½	
41015	C Occdental	$14⅛	13⅞	13⅞	-½
250	CP Forest	$28	28	28	
175867	CP Ltd	$19⅜	19	19⅜	+¼
10025	C Roxy	$6⅞	6⅞	6⅞	
169830	CTire A f	$21⅝	21⅛	21½	-⅛
2900	CUtil A f	$19⅜	19¼	19⅜	-⅛
13000	Canamax o	52	52	52	
8000	CanamA f	340	335	340	-10
8250	Cardior	$21¾	21½	21½	-½
30000	Cars	$14½	14¼	14½	+¼
26825	Cara A f	$13⅞	13¾	13⅞	+⅛
100	Celanese	$31⅞	31⅞	31⅞	-¼
2100	Cen Capital	$6¾	6⅝	6⅝	+⅛
22425	CenCap A	470	465	470	-10
12060	CentFd A	485	485	485	-5
22000	Charan	8	8	8	+1
635	Chieftan	$21	21	21	+¼
1100	Cineplex	280	275	280	+4
500	Co Steel f	$15⅛	15⅛	15⅛	
39598	TCC Bev	$10⅞	10⅞	10⅞	+⅛
10360	Cominco	$22¼	22	22¼	+¼
3100	Computing	350	345	350	
200	C HCI A f	$6½	6½	6½	
15100	Con TVX	490	480	485	-10
21305	Cnsum Gas	$34⅛	34	34	-½
1700	Cnsum Pkg	$5¼	5½	5¼	
104468	Conwst B	$13	12⅞	13	+⅛
100	Corby A	$29⅛	29⅛	29⅛	+¼
494000	Corona A f	$5⅛	5	5⅛	
600	Crownx	$6⅛	6	6⅛	
56650	Crownx A f	305	300	300	
2130	Denison A	65	65	65	+3
228	Denison B f	62	60	62	
3100	Derlan	$6⅛	6⅛	6⅛	
1572	Dickisn A f	410	410	410	
57766	Dofasco	$17⅛	16⅞	17⅛	+½
118558	D Textile	$5⅞	5½	5⅞	
25415	Domtar	$9½	9¼	9½	+¼
63900	Dylex A	280	275	276	-14
27200	E-L Fin	$50	49½	50	-½
184020	Echo Bay	$10	9⅝	9⅞	-¼
1400	Emco	420	420	420	
288	EmpireA f	$9	9	9	-⅛
11000	EquitySv A	86	85	85	
4000	FPI Ltd	490	480	480	-5
17800	Fed Ind A	$5⅞	5⅞	5⅞	
5000	Finning L	$11⅛	11⅛	11⅛	+⅛
3000	FCity Fin	380	380	380	
800	Fortis	$21⅝	21½	21⅝	+⅛
4800	FourSeasn f	$16⅞	16⅞	16⅞	-⅛
1542	Franco o	$16	16	16	
1985	GW Util	$36⅛	36⅛	36⅛	+⅛
33980	Galactic	140	135	140	-5
3000	Gandalf	275	270	270	-5
500	Gendis A	$19½	19½	19½	+⅛
100	G Trstco p	$18	18	18	+1¼
10000	Glamis	310	290	290	-15
22000	Goldcorp f	450	435	435	-5
2850	Gld Knight	$11⅛	11⅛	11⅛	
37800	Granges	147	144	145	+5
800	GL Group	$20	20	20	
1225	GW Lifeco	$12⅛	11½	12	+⅛
400	Greyhnd	$31⅛	31⅛	31⅛	-⅛
63815	Gulf Res	$12	11⅞	11⅞	
100	Harris A	440	440	440	+15
10500	Hawker	$21⅞	21½	21⅞	+⅛
2037	Hayes D	$11⅛	11⅛	11⅛	-⅛
15850	Hees Intl	$16½	16⅛	16⅛	-⅜
50200	Hemlo	$10⅛	10	10⅛	-⅛
6200	Hollingr	$11	10⅞	10⅞	
63800	Horsham f	$9⅜	9⅛	9⅛	-⅛
4989	H Bay Co	$19⅝	19½	19½	-⅛
47687	Imasco L	$27⅞	27⅜	27⅞	+½
98672	Imp Oil A	$60	59⅞	59⅞	+¼
107945	Inco	$28⅞	28⅛	28⅞	+⅜
951	Interhome	$48⅛	48	48	
5500	Inv Grp	$23½	23½	23½	
2700	Ipsco	$17	17	17	-¼
32753	Ivaco A f	$6⅞	6¾	6⅞	+⅛
28600	Ivaco B	$6⅞	6¾	6⅞	-½
5900	Jannock	$13½	13	13½	+⅛
100	Kerr Add	$15⅞	15⅛	15⅞	-⅛
30685	Labatt	$21⅞	21	21⅝	+⅜
288715	Lac Mnrls	$8⅞	8½	8½	-½
23710	Lafarge p	$13⅛	13⅛	13⅛	
3890	Laidlaw A	$20⅞	20⅞	20⅞	+½
738054	Laidlw B f	$20⅞	20	20½	+¼
2591	LowndM A	$7⅞	7⅞	7⅞	
3200	Loblaw Co	$17⅞	17⅞	17⅞	+⅛
985	MDS A	$15⅛	15⅛	15⅛	+⅛
6250	Mac Kenzie	$6⅛	6	6	-⅛
108633	Macmillan	$16⅛	15⅞	16⅛	+⅛
405000	Magna A f	230	205	225	+15
2515	Maritime f	$18⅛	17⅞	18	-⅛
1500	Mark Res	$9⅛	9⅛	9⅛	+⅛
1400	Memotec	$8⅛	8⅛	8⅛	
8000	Metall M	$11⅞	11⅞	11⅞	+⅛
42200	Mitel Corp	145	141	143	+3
6880	Molson A f	$32⅞	32⅞	32⅞	-⅛
10900	Molson B	$32⅞	32⅛	32⅛	
388124	Moore	$25⅞	25⅛	25⅛	-½
10700	Muscocho	8	8	8	-1½
222024	Nat Bk Can	$7⅞	7⅞	7⅞	+⅛
1208	NewTel Ent	$17½	17	17½	
9700	Noma A	465	450	450	-20
3500	Noranda F	$7⅞	7⅞	7⅞	+¼
87914	Noranda	$15⅛	15	15⅛	
15812	Norcen	$23⅞	23⅝	23⅝	-⅜
58424	Norcn A f	$21⅞	21½	21⅞	-¼
3510	NC Oils	$15	15	15	
112586	Nor Tel	$30	29⅞	30	+⅛
61225	Northgat	160	150	160	-5
420646	Nova f	$8⅞	8⅝	8⅞	+⅛
1000	Nowsco W	$14⅛	14⅛	14⅛	+⅛
5000	Numac	$6⅝	6½	6⅝	+⅛
53440	Ocelot B f	$6⅛	6⅛	6⅛	-⅛
6800	Omega Hyd	320	315	315	
6800	Onex f	$6⅛	5⅞	6⅛	-⅛
14178	Oshawa A f	$30⅛	30⅛	30⅛	-⅛
40248	PWA Corp	$7⅞	7½	7⅞	+⅛
18200	Pgurin A f	$8⅛	8	8⅛	+⅛
3512	Pamour	100	88	88	-12
2584	PanCan P	$31	30⅞	30⅞	-⅛
87000	Pegasus	$13⅛	12⅞	12⅞	-⅛
16200	PJewl A f	$5⅞	5⅞	5⅞	-⅛
2068	Pioneer M	4	4	4	-½
486875	Placer Dm	$17½	17⅛	17½	-⅛
1700	Poco Pet	$7⅞	7⅞	7⅞	-⅛
63818	Powr Cor f	$15⅞	15⅛	15½	-⅛
100	Powr Fin	$17⅛	17⅛	17⅛	+⅛
2187	Provigo	$9⅞	9½	9½	-⅜
2300	Quebcor A	$14	14	14	+⅛
74600	Ranger	$8⅛	8⅛	8⅛	
2050	Rayrock f	$7⅞	7⅞	7⅞	
115	Rd Stenhs S	$24	24	24	-¼
180208	Renaissnce	$16	16	16	
2500	Repap f	$5	495	5	-12½
4100	Rio Algom	$16⅞	16⅛	16⅞	+⅛
34000	Rogers B f	$6⅛	5⅞	6	+⅛
1000	Roman	225	225	225	-35
5400	Rothman	$45⅛	46½	45⅛	+⅜
176007	Royal Bnk	$22⅛	21⅞	22⅛	+⅛
229218	Ry Trco	$8⅛	8½	8⅛	+⅛
15972	SHL Syst	475	465	475	+10
1100	SNC A f	$13½	13½	13½	+⅛
500	St. CemA f	$11⅛	11⅛	11⅛	-⅛
2300	Samuel MT	$11⅛	11⅛	11⅛	
39815	Saskoil	$13⅞	13⅞	13⅞	-⅛
242650	Sceptre	390	385	385	-5
5450	Scot Paper	$17	17	17	-⅛
210	Scotts f	$13⅞	13⅞	13⅞	-⅛
2733	Scotts C	$14⅝	14⅝	14⅝	-⅜
35024	Seagram	$99	98⅝	99	+2¼
24495	Sears Can	$10⅛	10	10⅛	
3000	ShawC B f	$8⅝	8⅝	8⅝	
3984	Shell Can	$37¾	37½	37⅝	-
107600	Sherritt	$6	5⅞	6	
4000	Sonora	45	35	45	+
49600	Southam	$17⅞	17⅞	17⅞	-½
8595	Spar Aero f	$10⅛	10⅛	10⅛	-
14120	Stelco A	$11⅛	11½	11⅛	+
144880	Teck B f	$21⅛	20⅞	21⅛	
500	Terabec A	$9	9	9	
240651	ThomCor	$15⅞	15⅛	15⅞	+⅛
517098	Tor Dm Bk	$16⅛	15⅞	16	-⅛
2900	Tor Sun	$16⅞	16⅞	16⅞	-⅛
1120	Torstar B f	$22½	22½	22½	
17800	Total Pet	$24½	24⅛	24½	+⅛
90992	TrnAlta U	$12⅞	11⅞	12⅞	+⅛
383618	TrCan PL	$17⅛	17	17	
26372	Trilon A	$12⅛	12	12	-⅛
7305	Trimac	$6⅞	6½	6⅞	-⅛
42092	Trizec A f	$12⅛	11⅞	12	
852	Trizec B	$13½	13½	13½	+1
2200	UAP A	$15	15	15	+⅛
210700	Ungava f	210	190	210	+5
1000	Un Carbid	$15½	15½	15½	
4300	Un Corp	$25⅛	25⅛	25⅛	-⅛
326298	Varity C	247	236	245	+10
1200	Viceroy R	445	445	445	
700	Videotrn f	$11⅛	11⅛	11⅛	+⅛
609	Wajax A	$6⅝	6⅝	6⅝	-⅛
1240	Wst Fraser	$16½	16½	16½	
11000	Wcoast E	$21⅛	21⅛	21⅛	+⅛
1900	Westmin	390	385	390	
1300	Weston	$38½	38⅛	38⅛	-⅛
3000	Woodwd A	125	125	125	

f-No voting rights or restricted voting rights.

MONTREAL
Closing prices November 30

Sales	Stock	High	Low	Close	Chng
1200	BombrdrA	$15⅝	15⅝	15⅝	+⅛
43080	BombrdrB	$13⅞	13½	13⅞	+⅜
12031	Cambior	$11	10⅞	10⅞	-⅛
7200	Cascades	340	325	335	+10
4230	DomTxtA	$05⅞	05½	05⅞	+⅛
895	Memotec	$08⅛	08⅛	08⅛	+⅛
260011	NatBk Cda	$07⅞	07⅞	07½	+⅛
76850	Power Corp	$15⅝	15⅝	15½	
3212	Provigo	$09½	09½	09½	-⅛
601	Quebecr A	$13⅛	13⅛	13⅛	+⅛
2540	Quebecr B	$12⅛	12⅛	12⅛	-⅛
4000	Videotron	$11⅛	11⅛	11⅛	

Total Sales 6,189,116 shares.

INDICES

NEW YORK

DOW JONES	Nov. 30	Nov. 29	Nov. 28	Nov. 27	1990 HIGH	1990 LOW	Since compilation HIGH	Since compilation LOW
♦Industrials	2559.65	2518.81	2535.15	2543.81	2999.75 (16/7)	2365.10 (11/10)	2999.75 (16/7/90)	41.22 (2/7/32)
Home Bonds	90.62	90.39	90.41	90.28	93.04 (3/1)	88.44 (24/9)	—	—
Transport	853.00	828.22	831.18	839.13	1212.77 (6/6)	821.93 (17/10)	1532.01 (5/9/89)	12.32 (8/7/32)
Utilities	212.09	208.38	209.26	209.13	236.23 (2/1)	190.96 (24/8)	236.23 (2/1/90)	10.50 (8/4/32)

♦Day's High 2577.23 (2544.31) Low 2498.51 (2501.24)

STANDARD AND POOR'S	Nov. 30	Nov. 29	Nov. 28	Nov. 27	1990 HIGH	1990 LOW	Since compilation HIGH	Since compilation LOW
Composite ‡	322.22	316.42	317.95	318.10	368.95 (16/7)	295.46 (11/10)	368.95 (16/7/90)	4.40 (1/6/32)
Industrials	377.92	371.25	372.84	373.06	437.37 (16/7)	346.86 (11/10)	437.37 (16/7/90)	3.62 (21/6/32)
Financial	22.25	21.81	22.06	22.12	31.87 (3/1)	18.80 (29/10)	35.24 (9/10/89)	8.64 (1/10/74)
NYSE Composite	176.06	173.14	173.91	173.87	201.13 (16/7)	162.20 (11/10)	201.13 (16/7/90)	4.46 (25/4/42)
Amex Mkt. Value	301.79	299.87	298.97	297.00	382.45 (5/1)	288.07 (30/10)	397.03 (10/10/89)	29.31 (9/12/72)
NASDAQ Composite	359.02	355.75	355.06	354.05	469.60 (16/7)	325.44 (16/10)	485.73 (9/10/89)	54.87 (31/10/72)

	Nov. 23	Nov.16	Nov. 9	year ago (approx.)
Dow Industrial Div. Yield	4.06	4.01	4.09	3.97
	Nov.28	**Nov.21**	**Nov.14**	**year ago (approx.)**
S & P Industrial div. yield	3.42	3.44	3.39	2.97
S & P Indl. P/E ratio	15.37	15.29	15.47	14.25

NEW YORK ACTIVE STOCKS

Friday	Stocks traded	Closing price	Change on day
Moore Corp	4,386,700	22	-⅝
Armco	3,467,700	4⅛	-⅜
Motorola	3,235,400	50¼	-3⅜
Philip Morris	3,007,000	48⅝	+⅝
Navistar Intl	2,626,700	2	....
Nike B	2,617,000	34⅛	-1⅞
Pepsico	2,542,400	25⅝	+⅝
Fannie Mae	2,487,300	31⅝	+⅜
Gen Electric	2,476,500	54⅛	+1⅝
FPL	2,371,300	27⅛	+⅛

TRADING ACTIVITY

† Volume Millions	Nov. 30	Nov. 29	Nov. 28
New York	192.350	142.533	145.490
Amex	12.607	12.711	12.651
NASDAQ	(u)	114.188	128.591
Issues Traded	1,996	1,998	1,994
Rises	1,127	638	837
Falls	420	851	686
Unchanged	449	509	501
New Highs	19	11	14
New Lows	35	33	25

CANADA

TORONTO	Nov. 30	Nov. 29	Nov. 28	Nov. 27	1990 HIGH	1990 LOW
Metals & Minerals	2586.85	2556.12	2556.13	2561.37	3453.05 (4/1)	2486.60 (8/11)
Composite	3151.01	3138.99	3144.69	3140.01	4009.47 (3/1)	3009.91 (16/10)
MONTREAL Portfolio	1668.45	1665.31	1669.63	1667.67	2060.90 (3/1)	1607.24 (16/10)

Base values of all indices are 100 except NYSE All Common—50; Standard and Poor's—10; and Toronto Composite and Metals—1000. Toronto indices based 1975 and Montreal Portfolio 4/1/83. † Excluding bonds. ‡ Industrial, plus Utilities, Financial and Transportation. (c) Closed. (u) Unavailable.

	Nov. 30	Nov. 29	Nov. 28	Nov. 27	1990 HIGH	1990 LOW
AUSTRALIA						
All Ordinaries (1/1/80)	1319.7	1338.5	1351.1	1360.3	1713.7 (2/1)	1291.2 (2/11)
All Mining (1/1/80)	614.9	622.9	623.6	624.7	860.8 (5/1)	614.9 (30/11)
AUSTRIA						
Credit Aktien (30/12/84)	446.15	442.75	444.14	448.11	703.29 (19/3)	400.98 (25/9)
BELGIUM						
Brussels SE (Cash Mkt) (1/1/80)	(u)	4994.84	5016.28	5045.52	6599.43 (12/1)	4959.99 (25/9)
DENMARK						
Copenhagen SE (3/1/83)	328.44	324.88	324.94	325.92	388.29 (20/7)	324.88 (29/11)
FINLAND						
Unitas General (1975)	416.5	413.9	413.2	412.8	677.3 (23/1)	398.9 (24/10)
FRANCE						
CAC General (31/12/82)	425.70	424.31	426.00	426.36	564.62 (30/5)	410.18 (26/9)
CAC 40 (31/12/87)	1605.12	1607.06	1601.25	1605.92	2129.32 (20/4)	1485.39 (25/9)
GERMANY						
FAZ Aktien (31/12/58)	622.72	618.32	618.99	622.74	832.32 (19/7)	569.69 (28/9)
Commerzbank (1/12/53)	1767.9	1754.9	1757.2	1768.3	2414.0 (3/4)	1628.7 (28/9)
DAX (30/12/87)	1441.23	1418.92	1420.62	1415.26	1968.55 (30/3)	1334.89 (28/9)
HONG KONG						
Hang Seng Bank (31/7/64)	2965.06	2978.35	2986.39	2998.94	3559.89 (23/7)	2738.24 (1/2)
IRELAND						
ISEQ Overall (4/1/88)	1193.80	1215.72	1216.25	1223.47	1893.10 (22/1)	1193.80 (30/11)
ITALY						
Banca Com. Ital. (1972)	503.15	500.67	501.40	500.77	763.52 (14/6)	500.67 (29/11)
JAPAN						
Nikkei (16/5/49)	22454.63	22712.60	23053.88	23623.51	38712.88 (4/1)	20221.86 (1/10)
Tokyo SE (Topix) (4/1/68)	1652.01	1666.96	1697.35	1734.30	2867.70 (4/1)	1523.43 (1/10)
2nd Section (4/1/68)	2848.65	2903.79	2969.37	3001.18	4477.16 (16/7)	2848.65 (30/11)
MALAYSIA						
KLSE Composite (4/4/86)	464.71	465.62	466.79	468.42	632.22 (1/8)	459.08 (28/9)
NETHERLANDS						
CBS Ttl.Rtn Gen.(End 1983)	230.7	229.3	228.2	228.8	271.9 (20/7)	225.6 (8/11)
CBS All Shr (End 1983)	169.1	168.1	167.2	167.7	206.3 (3/1)	165.6 (8/11)
NORWAY						
Oslo SE (Ind) (2/1/83)	711.82	708.74	684.78	675.82	915.13 (2/8)	653.46 (21/11)
PHILIPPINES						
Manila Comp (2/1/85)	(c)	628.62	615.49	610.62	1160.70 (21/3)	514.80 (5/10)
SINGAPORE						
SES All-Singapore (2/4/75)	307.66	308.13	310.79	310.89	446.87 (16/7)	301.45 (11/10)
SOUTH AFRICA						
JSE Gold (28/9/78)	1267.0	1254.0	1266.0	1289.0	2230.0 (16/1)	1236.0 (23/11)
JSE Industrial (28/9/78)	2792.0	2787.0	2783.0	2787.0	3211.0 (6/2)	2640.0 (1/10)
SOUTH KOREA**						
Korea Comp Ex. (4/1/80)	697.03	692.55	699.76	687.27	928.82 (4/1)	566.27 (17/9)
SPAIN						
Madrid SE (30/12/85)	228.77	227.58	228.23	228.06	309.74 (16/7)	209.37 (28/9)
SWEDEN						
Affarsvariden Gen. (1/2/37)	842.3	825.8	825.2	815.6	1329.9 (5/7)	815.6 (27/11)
SWITZERLAND						
Swiss Bank Ind (31/12/58)	625.00	619.1	617.2	614.3	845.5 (13/7)	613.4 (28/9)
SBC General (1/4/87)	518.3	513.1	512.4	510.4	698.2 (13/7)	510.4 (26/11)
TAIWAN**						
Weighted Price (30/6/66)	4377.27	4218.14	4144.76	4386.32	12495.34 (10/2)	2560.47 (1/10)
THAILAND						
Bangkok SET (30/4/75)	544.30	558.20	587.15	592.60	1143.78 (25/7)	544.30 (30/11)
WORLD						
M.S. Capital Intl.(1/1/70) ($)	449.4*	454.4	458.9	463.1	571.0 (4/1)	423.1 (28/9)

**Saturday November 24: Taiwan Weighted Price: 4801.08 Korea Comp Ex. 678.92
♦ Subject to official recalculation. *Calculated at 15.00 GMT.
Base values of all indices are 100 except: Brussels SE, ISEQ Overall and DAX - 1,000, JSE Gold - 255.7, JSE 26 Industrials - 264.3 and Australia All Ordinary and Mining - 500; (c) Closed. (u) Unavailable.

TOKYO - Most Active Stocks
Friday 30 November 1990

	Stocks Traded	Closing Prices	Change on day		Stocks Traded	Closing Prices	Change on day
Iseki	11.4m	660	-40	M'bishi Heavy	6.2m	623	-12
Nippon Steel	11.3m	390	+6	M'sui Shpbldg	4.9m	439	-11
Kobe Steel	7.6m	443	-5	S'tomo Metal	4.6m	390	-9
Honshu Paper	7.5m	2,140	+50	NKK	4.1m	353	+3
Kyosan Elec	7.1m	1,610	0	Japan Airlines	4.1m	981	-19

FT MANAGED FUNDS SERVICE

● For Current Unit Trust Prices on any telephone ring direct-0836 4 + five digit code (listed below). Calls charged at 44p per minute peak and 33p off peak, inc VAT

AUTHORISED UNIT TRUSTS

Unit Name	Init Chrge	Canc. Price	Bid Price	Offer Price	Yield Gr's	City-line
[illegible]						

Guide to pricing of Authorised Unit Trusts

Compiled with the assistance of Lautro §§

INITIAL CHARGE: Charge made on sale of units. Used to defray marketing and administrative costs, including commission paid to intermediaries. This charge is included in the price of units.

OFFER PRICE: Also called issue price. The price at which units are bought by investors.

BID PRICE: Also called redemption price. The price at which units are sold back by investors.

CANCELLATION PRICE: The maximum redemption price. The maximum spread between the offer and bid prices is determined by a formula laid down by the government. In practice, most unit trust managers quote a much narrower spread. As a result, the bid price is often set above the cancellation price. However, the bid price might be moved to the cancellation price by the managers at any time, usually in circumstances in which there is a large excess of sellers of units over buyers.

TIME: The time shown alongside the fund manager's name is the time of the unit trust's valuation point unless another time is indicated by the symbol alongside the individual unit trust name. The symbols are as follows: (♥) - 0001 to 1100 hours; (◆) - 1101 to 1400 hours; (♦) - 1401 to 1700 hours; (♠) - 1701 to midnight. Daily dealing prices are set on the basis of the valuation point; a short period of time may elapse before prices become available.

HISTORIC PRICING: The letter H denotes that the managers will normally deal on the price set on the most recent valuation. The prices shown are the latest available before publication and may not be the current dealing levels because of an intervening portfolio revaluation or a switch to a forward pricing basis. The managers must deal at a forward price on request, and may move to forward pricing at any time.

FORWARD PRICING: The letter F denotes that the managers deal at the price to be set on the next valuation. Investors can be given no definite price in advance of the purchase or sale being carried out. The prices appearing in the newspaper are the most recent provided by the managers.

SCHEME PARTICULARS AND REPORTS: The most recent report and scheme particulars can be obtained free of charge from fund managers.

Other explanatory notes are contained in the last column of the FT Managed Funds Service.

§§ Life Assurance and Unit Trust Regulatory Organisation, Centre Point, 103 New Oxford Street, London WC1A 1QH Tel: 071 - 379 - 0444.

هكذا من الأصل

FT MANAGED FUNDS SERVICE

● For Current Unit Trust Prices on any telephone ring direct-0836 4 + five digit code (listed below). Calls charged at 44p per minute peak and 33p off peak, inc VAT

Target Trust Mngrs Ltd (1600)F
Target Hse, Gatehouse Rd, Aylesbury, Bucks
Admin. 0296 394000 Dealing 0296 312156

Unit Name	Init Chrge	Canc. Price	Bid Price	Offer Price	Yield Gr's	City-line
American Eagle	5	58.75	58.75	62.71	1.23	41482
Australia	5	5.254	5.254	5.625	4.74	41483
Equity	5	143.7	143.7	154.3	4.99	41486
Euro Spec Sits	5	94.31	94.31	101.3	0.68	41487
Financial	5	25.42	25.58	27.53	5.42	41488
Global Opps Inc	5	55.56	55.56xd	59.68	0.00	41489
Global Opps Acc	5	56.76	56.76	60.97	0.00	41490
Gold & Gen Inc	5	34.74	34.74xd	37.36	1.07	41491
Gold & Gen Acc	5	64.94	64.94	69.84	1.07	41492
Income	5	88.73	88.80	95.51	6.70	41493
Japan & General	5	104.1	104.1	111.9	0.00	41494
Preference Share	5	17.55	17.78xd	19.14	13.88	41497
UK Capital	5	78.14	78.14	83.91	4.36	41500
World Income	5	53.23	53.23xd	57.23	6.18	41501
Worldwide Capital	5	146.0	146.0	157.1	3.48	41502

Templeton Unit Trust Managers Ltd (1200)F
Atholl Crescent, Edinburgh EH3 8HA 031 228 9992

Global Growth Acc	6	91.19	91.74	98.12	3.64	46671
Global Growth Inc	6	87.61	88.15	94.27	3.64	46672
Global Balanced Acc	6	93.47	93.79	100.31	4.65	46669
Global Balanced Inc	6	87.08	87.38	93.45	4.65	46670
Value Tst Acc	6½	65.36	69.25	74.06	4.56	42642
Value Tst Inc	6½	66.65	67.52	72.22	4.56	46990
Intl Pen & Chrties Inc ♦	3	85.03	86.23	90.53	3.95	46989
Intl Pen & Chrties Acc ♦	3	82.10	83.21	87.36	3.95	41905

Thornhill Unit Trust Managers Ltd (1200)F
28 St John's Sq, London EC1M 4AE 071-251 6767

Capital	5	46.90	47.16	50.17	—	47874
Overseas	5	39.23	39.43	41.94	—	43776
(Accum Units)	5	39.23	39.43	41.94	—	—

Thornton Unit Managers Ltd (1000)F
33 Cavendish Sq, London W1M 0DH 071-493 7262
Dealing 071-493 8545

American Opps	5	41.37	41.37	44.12	0.25	41506
(Accum Units)	5	42.58	42.58	45.40	0.25	41507
Cash	0	51.23	51.23	51.23	14.00	45247
Accum Units	0	51.23	51.23	51.23	14.00	45248
European Opps ♦	5	54.53	54.53xd	58.06	0.00	41508
(Accum Units) ♦	5	54.83	54.83xd	58.38	0.00	46366
Far Eastern Opps	5	95.12	95.24	101.58	0.00	41509
(Accum Units)	5	95.73	95.85	102.23	0.00	41510
Golden Opps	5	25.03	25.03	26.64	0.00	41511
(Accum Units)	5	25.75	25.75	27.40	0.00	46367
Intl Hi-Yield	5	45.94	45.94	48.99	5.62	41512
(Accum Units)	5	50.08	50.08	53.41	5.62	46368
Smlr Japan Tst	5	52.57	52.57	56.01	0.00	41513

Murray Johnstone UT Mngmt
Murray Exempt Funds

	Bid Price	Offer Price	Yield Gross	City-line
Amer Expt Nov 28	36.8	38.2	2.79	41064
Euro Expt Nov 28	45.9	48.1	2.57	41065
Fixed Int Ex Nov 28	45.5	46.7	10.32	46594
Japan Expt Nov 28	39.6	41.2xd	0.70	41066
Managed Ex Nov 29	38.4	39.9xd	4.93	41067
SE Asia Expt Nov 28	54.1	56.8	4.63	41068
Sm Cos Expt Nov 28	28.2	29.6xd	6.07	41069
UK Eqty Ex Nov 28	36.1	37.9	4.61	41070

Phillips & Drew Fund Management Ltd

Small Co's Nov 6	589.0	632.3xd	5.89	41138
Do Accum	696.0	703.2	5.89	41139
Int Expt Nov 28	142.6	144.8	3.35	41140
UK Index Nov 6	960.6	982.0	6.06	46945
Do Accum	1016	1037	6.06	46946
ConvertRate Nov 23	79.55	82.17	9.06	46938
World ex UK Index Nov 26	636.2	644.8	2.28	47887
Do Accum	636.2	644.8	2.28	47888
Japan Index Nov 26	520.1	527.7	0.34	47881
Do Accum	521.1	528.6	0.34	47882
USA Index Nov 26	728.9	733.7	3.51	47885
Do Accum	739.2	743.9	3.51	47886
Europe ex UK Index Nov 26	773.2	792.4	4.0	47879
Do Accum	785.2	804.6	4.0	47880
Pacific ex Jap Index Nov 26	715.9	735.9	5.48	47883
Do Accum	729.4	749.7	5.48	47884
Managed Exempt Nov 28	90.15	91.84	5.72	40338
American Exempt Nov 28	98.28	99.85	4.41	40574
European Exempt Nov 28	100.5	101.8	3.5	40628
Japan Exempt Nov 28	98.44	99.67	0.36	40635
Pacific Basin Nov 28	95.19	97.80	4.93	40636

NM Rothschild Asset Management Ltd

NC Managed	52.8	56.2xd	4.32	40339
NC Property	174.3	191.2	—	41205

J. Rothschild Fund Managers Ltd

Intl Exempt Accum	118.3	119.2xd	4.21	44085

Stewart Ivory & Co Ltd

Saints PPP Oct 12	224.9	236.8	—	41422

Closed to new business

Thornton Unit Managers Ltd

Managed Exempt Nov 1	81.55	85.68xd	4.83	46975
(Accum Units)	83.81	88.05xd	4.83	46976

Touche Remnant Unit Tst Mngt Ltd

TR Exempt European	672	693	3.04	47801
TR Exempt Nth Amer	717	731	4.73	47802
TR Exempt Pac Basin	625	[illegible]	1.91	47803

INSURANCES

OTHER UK UNIT TRUSTS

Continued on next page

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National Provident Institution
48 Gracechurch St, London EC3P 3HH 071-623 4200

	Bid Price	Offer Price	Yield Gross	City-line
Managed	305.1	321.2	–	43163
UK Equity	384.4	404.7	–	43164
Overseas Eq	283.3	298.3	–	43165
American	210.9	222.0	–	43166
Far East	286.5	301.6	–	43167
Property	193.1	203.3	–	43168
Fixed Int	240.0	252.7	–	43169
Indexed Gilt	149.7	157.6	–	43170
Deposit	173.0	182.2	–	43171
Pension Fund (Accum Units)				
Managed	422.9	445.2	–	43173
UK Equity	491.4	517.3	–	43175
Overseas Eq	465.0	489.5	–	43177
American	278.2	292.9	–	43179
Far East	479.0	504.3	–	43181
Property	240.2	252.9	–	43183
Fixed Int	292.4	307.8	–	43185
Indexed Gilt	164.6	173.3	–	43187
Deposit	238.4	251.0	–	43189
NPI Pensions Management Ltd				
Managed Fund	928.8	945.4	–	43190

Prices Nov 1 Next dealing Dec 3

Norwich Union Asset Management Ltd
PO Box 140, Norwich NR3 1PP 0603 686787

NUAM Funds

	Bid Price	Offer Price	Yield Gross	City-line
Managed Fund	61.7	64.9	–	43191
Stock Market Mngd Fund	57.7	60.8	–	43192
Equity Fund	66.9	70.4	–	43193
International Fund	49.9	52.5	–	43194
European Fund	60.3	63.5	–	43195

Providence Capital Life Assc. Co Ltd – Contd.

Total Investment Bond

	Bid Price	Offer Price	Yield Gross	City-line
UK Equity Initial	134.0		–	43429
UK Fixed Int Initial	112.3		–	43430
Intl Equities Initial	100.6		–	43431
UK Managed Initial	106.7		–	43432
Property Initial	162.0		–	43433
Money Initial	84.8		–	43434
Special Market Initial	92.6		–	43435
Japan Equity Initial	66.6		–	46762
North American Initial	63.6		–	43437
Pacific Initial	56.4		–	43438
Technology Initial	79.2		–	43439
Nat Resources Initial	41.9		–	43440
European Initial	81.4		–	43442
Residential Prop Init	93.7		–	43443
Swiss Equities Initial	29.5		–	43444
Hong Kong Initial	43.6		–	43445
UK High Inc Eq Init	60.5		–	43446
Int Fixed Interest Init	50.8		–	46408
Int Managed Init	48.9		–	46409
HIP Managed Init	95.9		–	46752
HIP Managed II Initial	89.9		–	41927
Broker Funds				
High Performance	60.6	63.9	–	43448
Towerhill Mngd Fd Acc	36.8	38.8	–	43447
YRA Executive Fd	81.0	85.4	–	43449
£ Global Growth Acc	108.5	114.4	–	47160
£ Hi Income Money Acc	133.4	140.7	–	47161
HA Balanced		46.3	–	47162
H.F. Speculator Fd		111.8	–	43451
PEP Acorn II		103.1	–	46486

Royal Heritage Life Assurance Ltd—Contd.

Barbican Funds (formerly Oppenheimer)

	Bid Price	Offer Price	Yield Gross	City-line
Global Inc & Gwth	103.4	108.8	–	43691
Worldwide Recovery	84.7	89.2	–	43692
European Select Opps	125.6	132.2	–	43695
Pacific Growth	125.2	131.8	–	43697
Intl Managed	68.0	71.6	–	43698
Perpetual Funds				
International Growth	92.0	96.8	–	43700
Income	99.6	104.8	–	43701
American Growth	82.5	86.8	–	43703
Intl Emerging Cos	94.7	99.7	–	43704
Far East Growth	116.8	122.9	–	43705
European	117.8	124.0	–	43706
Managed	101.2	106.5	–	43707
TSB Funds				
Income	106.7	112.3	–	43713
Managed	120.2	126.5	–	43718
Broker Managed				
City Capital Bond	167.6	176.4	–	43739
Birchwood	127.2	133.9	–	43740
Hardwick Inv Mngt	108.0	113.7	–	43746
Sterling Cap Growth	89.2	93.9	–	43750
Constable Smith Fund	38.4	40.5	–	43751
Stonehenge Inv Man Bd	122.2	128.6	–	43755
Western Counties Man	117.7	123.9	–	43760
Fosters International	139.0	146.3	–	43765
Richards, Longstaff	114.7	120.7	–	43771
Heritage Mngd Bond	153.1	161.2	–	43784
DDA Gilbey Mngd Eq Fd	81.4	85.70	–	43791
Guy Browning Fd	135.3	142.5	–	43792
J J Barrington Int Fd	111.5	117.4	–	43794
G & T Smaller Cos Fd	61.4	64.6	–	43796

Skandia Life Assurance Co Ltd – Contd.

Skandia Boring Funds

	Bid Price	Offer Price	Yield Gross	City-line
Eastern	98.9	104.1	–	47174
Equity Income	92.4	97.2	–	47175
European Smllr Co's	99.4	104.6	–	47176
German Growth	83.6	87.9	–	43777
Global Growth	90.5	95.2	–	47177
Portfolio	98.3	103.4	–	47178
Japan Growth	77.1	81.1	–	47179
Japan Samurai	73.4	77.2	–	47180
European Growth	114.6	120.6	–	47181
American Growth	87.9	92.5	–	47182
UK Smaller Companies	67.2	70.7	–	47183
Managed	86.4	90.9	–	47184
Skandia Fidelity Funds				
American	98.0	103.1	–	44011
American Equity Inc	83.5	87.8	–	44012
American Special Sits	78.7	82.8	–	44013
ASEAN	62.0	65.2	–	43778
European	201.0	211.5	–	44016
European Income	112.5	118.4	–	44017
1992 Euro Opps	86.1	90.6	–	46006
Famous Names	79.1	83.2	–	44018
Far East Income	104.7	110.2	–	44019
Gilt & Fxd Interest	103.4	108.8	–	44020
Global Convertible	84.8	89.2	–	44021
Growth & Income	120.9	127.2	–	44022
Income Plus	126.2	132.8	–	44023
International Bond	105.0	110.5	–	44024
Japan	99.2	104.4	–	44025
Japan Smllr Cos	105.8	111.3	–	44015
Japan Special Sits	127.9	134.6	–	44026
Managed International	91.7	96.5	–	44027

Windsor Life Assur Co Ltd
Windsor House, Telford, Shropshire 0952 292929

	Bid Price	Offer Price	Yield Gross	City-line
American	202.6	213.3	–	44404
Balanced Accum (3)	100.7	106.0	–	43782
Deposit	219.2	230.7	–	44405
Far East	226.6	238.5	–	44406
Folly Man Acc Pen (2)	468.0	492.6	–	44403
Folly Man Acc Pen (3)	468.4	493.1	–	43779
Gilt	252.8	266.1	–	44409
Grnd Rent & Gilt I Pen	276.9	291.4	–	44410
Grnd Rent & Gilt II Life	112.0	117.9	–	47238
Grnd Rent & Gilt II Pen	117.6	123.8	–	47239
Grnd Rent & Gilt III Life	102.1	107.5	–	43780
Grnd Rent & Gilt III Pen	105.0	110.5	–	43781
High Inc Equity	206.6	217.4	–	44411
High Inc Fixed Int	117.3	123.5	–	44412
Hedge Fund	274.7	289.1	–	44413
Index-Linked Gilt	156.2	164.4	–	44414
Initial Pen Units	279.4	294.1	–	44415
Investor Units	223.3	235.1	–	44416
Kiwi Key (Managed)	471.0	485.5	–	44417
Nth Amer Fd	162.9	171.5	–	44418
Open Plan Mngd Fd	166.6	175.4	–	44419
Pacific	538.7	567.1	–	44420
Property	238.3	250.9	–	44421
Retail & Invs'ty Life	140.2	140.2	–	44423
Retail & Invs'ty Pen Uts	159.3	159.3	–	44424
Takeover Fund	242.7	255.4	–	44425
UK Equity	190.9	200.9	–	44426
UK Tracker Accum (3)	95.3	100.3	–	43783

Woolwich Life Assurance Co Ltd
1-3 Queensway, Redhill, Surrey RH1 1NH 0737 778800

	Bid Price	Offer Price	Yield Gross	City-line
Managed Fd		101.8	–	43651

Zurich Life Assurance Co Ltd

Sun Alliance International Life
PO Box 77, New St, St Peter Port, Guernsey 0481 714108

	Bid Price	Offer Price	Yield Gross	City-line
North American Equity $	$7.87	8.47	–	45824
Pacific Equity $	$7.15	7.70	–	45825
Intl Currency $	$4.28	4.61	–	45826
Intl Bond Fund $	$7.05	7.59	–	45827
Gilt Fund £	£4.09	4.41	–	45828
US Dollar Mngd Fd $	$1.59	1.71	–	45829
Stlg Managed Fd £	£1.01	1.08	–	46829

Target International Group
1 rue Emile Bian, Luxembourg Tlx 2809 Tel 4050751

	Bid Price	Offer Price	Yield Gross	City-line
Sterling Pens Plan	£0.68	0.74	–	45907
US Dollar Pens Plan	$0.70	0.76	–	45908
Yen Pens Plan	Y222	238	–	45909
Ecu Pens Plan	Ecu0.60	0.65	–	45910
Sterling Man Fd	£0.96	1.02	–	45911
Sterling Fixed Int Fd	£1.57	1.66	–	45912
US Dollar Man Fd	$1.16	1.23	–	45913
US Dollar Fixed Int Fd	$1.42	1.50	–	45914
Ecu Bond Fd	Ecu1.07	1.13	–	45915
Davenport Cntnct £ Fd	£0.78	0.84	–	45916
Davenport Cntnct $ Fd	$0.49	0.53	–	45917
Davenport Cntnt £ F I	£1.09	1.17	–	45918
LWI Universal Stg Mngd	£0.77	0.80	–	45919
LWI Universal $ Mngd	$0.65	0.80	–	45920
Matheson £ Pens	£0.75	0.80	–	45921
Matheson $ Pens	$0.80	0.85	–	45922
EDN MIM £	£0.84	0.91	–	47412
EDN MIM $	$0.94	1.02	–	47413
Royal Wessex Fund	£0.71	0.739	–	45924
Wessex Special Sits	£0.99	1.037	–	46348
Proinco $ Managed	$0.93	0.967	–	45925
Proinco £ Managed	£0.97	1.018	–	47957
Argent Stg Stand		£10.31	–	46311

J. D. Ward Financial Services Ltd
9 Kingsway, London, WC2 6XF 01-836 4375

	Bid Price	Offer Price	Yield Gross	City-line
Target Mngd Bond	186.2	196.0	–	44591
Target Mngd Pension	112.7	118.7	–	44592
Albany Life Acc	166.4	175.1	–	41721
Albany Pens Acc	206.3	217.1	–	41722

OFFSHORE AND OVERSEAS

BERMUDA (SIB RECOGNISED)

Unit Name	Init Chrge	Canc. Price	Bid Price	Offer Price	Yield Gr's	City-line

Orion Fund Limited
6 Front St, Hamilton, HM11, Bermuda 809 295 4000

Orion		5		9.8538		–14049

CANADA (SIB RECOGNISED)

GUERNSEY (SIB RECOGNISED)

OFFSHORE INSURANCES

MANAGEMENT SERVICES

GUERNSEY (REGULATED)

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IRELAND (SIB RECOGNISED)

ISLE OF MAN (SIB RECOGNISED)

ISLE OF MAN (REGULATED)(**)

JERSEY (SIB RECOGNISED)

JERSEY (REGULATED)(**)

LUXEMBOURG (SIB RECOGNISED)

LUXEMBOURG (REGULATED)(**)

SWITZERLAND (SIB RECOGNISED)

OTHER OFFSHORE FUNDS

MANAGED FUNDS NOTES

CURRENCIES, MONEY AND CAPITAL MARKETS

MONEY MARKETS

Stability threatened

INTEREST RATE differentials have moved in favour of the the D-Mark currency block since sterling joined the EMS exchange rate mechanism on October 8.

The German Bundesbank increased its Lombard rate by ½ point on November 1, followed by rises of ¼ point in official Dutch and Belgian rates. Towards the end of last week Euro D-Mark rates were about ⅛ per cent above similar Dutch rates, compared with ⅛ in early October, while D-Mark rates were higher than corresponding Belgian rates for the first time in some 16 years. This has put upward pressure on market rates in Amsterdam and Brussels, prompting a further rise in official Dutch and Belgian rates last Friday.

The Belgian franc and the Dutch guilder have followed the D-Mark up the ERM ladder, at the expense of currencies not protected by higher rates. Sterling and the French franc have suffered, as UK rates were cut by 1 per cent when the pound joined the ERM and French rates were reduced by ¼ point only a day before the Bundesbank increased rates.

Upward pressure on the Spanish peseta has eased with the rise in German rates and the currency is now comfortably within its 6 per cent allowed band of movement. The Italian lira has followed a similar path to sterling, falling from second strongest to the weakest position, but the lira is now around the middle of the system, thanks to monetary tightening by the Bank of Italy. This has pushed three-month Eurolira rates up to 12¾ from 10¾ per cent over the last eight weeks.

The price of German unification could be yet higher Frankfurt rates, with the obvious implication that strain will increase on those currencies not protected by similar moves.

UK clearing bank base lending rate
14 per cent
from October 8, 1990

£ IN NEW YORK

Nov.30	Close	Previous Close
£ Spot	1.9430-1.9440	1.9430-1.9440
1 month	0.83-0.82pm	0.84-0.82pm
3 months	2.33-2.30pm	2.40-2.37pm
12 months	7.40-7.30pm	7.48-7.38pm

Forward premiums and discounts apply to the US dollar

STERLING INDEX

	Nov.30	Previous
8.30 am	94.0	94.5
9.00 am	94.0	94.6
10.00 am	94.0	94.6
11.00 am	94.1	94.6
Noon	94.1	94.6
1.00 pm	94.1	94.6
2.00 pm	94.1	94.6
3.00 pm	94.2	94.6
4.00 pm	94.0	94.5

CURRENCY MOVEMENTS

Nov 30	Bank of England Index	Morgan** Guaranty Changes %
Sterling	94.0	-18.0
U.S Dollar	61.2	-18.0
Canadian Dollar	101.3	-0.04
Austrian Schilling	110.6	+12.4
Belgian Franc	112.1	-1.8
Danish Krone	111.3	+5.3
D-Mark	120.2	+26.0
Swiss Franc	114.8	+23.1
Dutch Guilder	115.5	+16.9
French Franc	105.5	-11.3
Lira	100.1	-19.3
Yen	131.0	+65.9

Morgan Guaranty changes: average 1980-1982=100. Bank of England Index (Base Average 1985=100). **Rates are for Nov.29.

CURRENCY RATES

Nov 30	Bank rate %	Special * Drawing Rights	European † Currency Unit
Sterling	-	0.732352	0.703838
U.S Dollar	7	1.44017	1.36439
Canadian $	12.82	1.67708	1.59252
Austrian Sch	6½	15.0858	14.4284
Belgian Franc	10¼	44.2420	42.3575
Danish Krone	10½	8.22121	7.86230
D-Mark	6.00	2.14268	2.05041
Dutch Guilder	7.25	2.41733	2.31305
French Franc	10¼	7.23829	6.92087
Italian Lira	12½	1610.57	1539.85
Japanese Yen	6	187.726	180.222
Norway Krone	8	8.363072	8.00725
Spanish Peseta	-	136.144	181.941
Swedish Krona	11	N/A	7.67469
Swiss Franc	6.00	1.82614	1.75051
Greek Drach	20½	N/A	210.976
Irish Punt	-	N/A	0.768800

† European Commission Calculations.
* All SDR rates are for Nov 29

OTHER CURRENCIES

Nov 30	£	$
Argentina	9828.20 - 9852.65	5070.00 - 5080.00
Australia	2.5010 - 2.5030	1.2910 - 1.2920
Brazil	279.100 - 281.100	144.000 - 145.000
Finland	6.9610 - 6.9840	3.5990 - 3.6020
Greece	297.10 - 301.85	153.75 - 156.20
Hong Kong	15.1010 - 15.1145	7.7985 - 7.8005
Iran	126.00*	63.50*
Korea(Sth)	1371.30 - 1393.40	710.30 - 715.90
Kuwait	N/A	N/A
Luxembourg	60.20 - 60.30	31.00 - 31.10
Malaysia	5.2300 - 5.2425	2.7025 - 2.7045
Mexico	5697.85 - 5701.25	2939.00 - 2940.00
N.Zealand	3.1730 - 3.1780	1.6395 - 1.6405
Saudi Ar	7.2905 - 7.2995	3.7490 - 3.7510
Singapore	3.3305 - 3.3380	1.7200 - 1.7220
S.Af (Cm)	4.8690 - 4.8810	2.5215 - 2.5235
S.Af (Fn)	6.6145 - 6.7285	3.4130 - 3.4720
Taiwan	52.70 - 52.80	27.20 - 27.25
U.A.E.	7.1015 - 7.1495	3.6720 - 3.6740

* Selling rate

CHICAGO

U.S. TREASURY BONDS (CBT) 8% $100,000 32nds of 100%

	Close	High	Low	Prev.
Dec	94-29	94-30	93-22	94-05
Mar	94-18	94-20	93-12	93-27
Jun	94-06	94-07	93-02	93-15
Sep	93-25	93-25	93-00	93-02
Dec	93-12	93-12	92-19	92-22
Mar	93-00	93-00	92-07	92-11
Jun	92-21	91-26	91-26	92-00
Sep	92-11	-	-	91-22

JAPANESE YEN (IMM) Y12.5m $ per Y100

	Close	High	Low	Prev.
Dec	0.7538	0.7545	0.7470	0.7495
Mar	0.7537	0.7545	0.7470	0.7495
Jun	0.7530	0.7530	0.7490	0.7487
Sep	0.7524	-	-	0.7481

DEUTSCHE MARK (IMM) DM125,000 $ per DM

U.S. TREASURY BILLS (IMM) $1m points of 100%

THREE-MONTH EURODOLLAR (IMM) $1m points of 100%

SWISS FRANC (IMM) SFr 125,000 $ per SFr

STANDARD & POORS 500 INDEX

PHILADELPHIA SE £/$ OPTIONS £31,250 (cents per £1)

POUND SPOT - FORWARD AGAINST THE POUND

Nov 30	Day's spread	Close	One month	% p.a.	Three months	% p.a.
US	1.9280 - 1.9460	1.9390 - 1.9400	0.85-0.83cpm	5.20	2.34-2.30pm	4.78
Canada	2.2485 - 2.2665	2.2625 - 2.2635	0.41-0.30cpm	1.88	0.77-0.64pm	1.25
Netherlands	3.2735 - 3.2945	3.2775 - 3.2875	1⅛-1¼cpm	5.03	3½-3¼pm	4.11
Belgium	59.85 - 60.40	60.20 - 60.30	28-26cpm	5.38	67-60pm	4.22
Denmark	11.1175 - 11.1995	11.1175 - 11.1275	3⅞-3½orepm	3.98	8¼-7⅝pm	2.81
Ireland	1.0865 - 1.1000	1.0905 - 1.0915	0.33-0.28cpm	3.35	0.73-0.62pm	2.47
Germany	2.9075 - 2.9200	2.9075 - 2.9125	1¼-1pfpm	4.64	3-2¾pm	3.95
Portugal	254.65 - 257.15	255.35 - 256.35	44-64cdis	-2.53	140-200dis	-2.66
Spain	183.80 - 185.50	184.30 - 184.70	5-12cdis	-0.55	45-55dis	-1.08
Italy	2177.50 - 2191.70	2185.25 - 2186.25	3-1lirepm	1.10	6-3pm	0.82
Norway	11.3175 - 11.4045	11.3175 - 11.3275	2⅞-2⅛orepm	2.65	5¼-4⅝pm	1.74
France	9.7920 - 9.8510	9.8225 - 9.8325	3⅞-3¼cpm	4.04	7¾-7½pm	3.10
Sweden	10.8600 - 10.9405	10.8600 - 10.8700	¼-1¼oredis	-1.04	4½-5dis	-1.75
Japan	257.65 - 259.00	257.75 - 258.75	1¼-1⅛ypm	5.52	3¼-3pm	4.84
Austria	20.42 - 20.56	20.52 - 20.55	9-8gropm	4.97	22½-20pm	4.10
Switzerland	2.4720 - 2.4890	2.4725 - 2.4825	1¼-⅞cpm	4.84	2¾-2½pm	4.24
Ecu	1.4095 - 1.4180	1.4095 - 1.4105	0.46-0.42cpm	3.74	1.08-1.00pm	2.95

Commercial rates taken towards the end of London trading. Six-month forward dollar 4.34-4.29cpm 12 Month 7.54-7.44cpm

DOLLAR SPOT - FORWARD AGAINST THE DOLLAR

Nov 30	Day's spread	Close	One month	% p.a.	Three months	% p.a.
UK†	1.9280 - 1.9460	1.9390 - 1.9400	0.85-0.83cpm	5.20	2.34-2.30pm	4.78
Ireland†	1.7680 - 1.7755	1.7730 - 1.7740	0.24-0.19cpm	1.45	1.04-0.94pm	2.23
Canada	1.1630 - 1.1680	1.1650 - 1.1660	0.30-0.34cdis	-3.29	1.02-1.06dis	-3.57
Netherlands	1.6895 - 1.7015	1.6920 - 1.6930	0.01-0.04cdis	-0.18	0.28-0.32dis	-0.71
Belgium	30.95 - 31.15	31.00 - 31.10	2cdis-par	-0.39	2-6dis	-0.52
Denmark	5.7325 - 5.7850	5.7325 - 5.7375	0.50-0.70oredis	-1.26	2.60-3.20dis	-2.02
Germany	1.4930 - 1.5090	1.5000 - 1.5010	0.06-0.08pfdis	-0.56	0.33-0.36dis	-0.92
Portugal	131.90 - 132.35	131.90 - 132.00	58-68cdis	-5.73	220-250dis	-7.12
Spain	95.15 - 95.70	95.35 - 95.45	41-48cdis	-5.60	138-148dis	-6.00
Italy	1124.75 - 1133.00	1126.75 - 1127.25	3.50-4.30liredis	-4.15	11.00-12.00dis	-4.08
Norway	5.8500 - 5.8890	5.8350 - 5.8400	1.10-1.35oredis	-2.52	4.40-4.70dis	-3.12
France	5.0485 - 5.0945	5.0650 - 5.0700	0.46-0.51cdis	-1.15	2.09-2.19dis	-1.69
Sweden	5.6000 - 5.6410	5.6000 - 5.6050	2.90-3.00oredis	-6.32	9.25-9.55dis	-6.71
Japan	132.55 - 133.80	133.05 - 133.15	0.05-0.03ypm	0.36	0.04-0.01pm	0.08
Austria	10.5570 - 10.6080	10.5700 - 10.5750	0.15-0.60grdis	-0.43	1.40-2.60dis	-0.76
Switzerland	1.2700 - 1.2860	1.2765 - 1.2775	par-0.03cdis	-0.14	0.14-0.18dis	-0.50
Ecu	1.3655 - 1.3735	1.3680 - 1.3690	0.19-0.16cpm	1.53	0.68-0.62pm	1.90

Commercial rates taken towards the end of London trading. † UK, Ireland and ECU are quoted in US currency. Forward premiums and discounts apply to the US dollar and not to the individual currency.

EXCHANGE CROSS RATES

Nov 30	£	$	DM	Yen	F Fr.	S Fr	H Fl.	Lira	C $	B Fr.
£	1	1.940	2.910	258.3	9.828	2.478	3.283	2186.	2.263	60.25
$	0.515	1	1.500	133.1	5.066	1.277	1.692	1127	1.166	31.06
DM	0.344	0.667	1	88.76	3.377	0.852	1.128	751.2	0.778	20.70
YEN	3.871	7.511	11.27	1000.	38.05	9.595	12.71	8463	8.761	233.3
F Fr.	1.018	1.974	2.961	262.8	10.	2.521	3.340	2224	2.303	61.30
S Fr.	0.404	0.783	1.174	104.2	3.966	1	1.325	882.2	0.913	24.31
H Fl.	0.305	0.591	0.886	78.68	2.994	0.755	1	665.9	0.689	18.35
Lira	0.457	0.887	1.331	118.2	4.496	1.134	1.502	1000	1.035	27.56
C $	0.442	0.857	1.286	114.1	4.343	1.095	1.451	966.0	1	26.62
B Fr.	1.660	3.220	4.830	428.7	16.31	4.113	5.449	3628	3.756	100.

Yen per 1,000: French Fr. per 10: Lira per 1,000: Belgian Fr. per 100.

EURO-CURRENCY INTEREST RATES

Nov 30	Short term	7 Days notice	One Month	Three Months	Six Months	One Year
Sterling	14⅝ - 14¼	14⅜ - 14⅛	14⅛ - 14	13⅞ - 13¾	13 - 12⅞	12⅜ - 12¼
US Dollar	7⅝ - 7⅜	7⅞ - 7⅝	8¼ - 8⅛	8⅜ - 8¼	8¼ - 8⅛	8⅛ - 8
Can. Dollar	12¼ - 12	12¼ - 12	12⅛ - 11⅞	12 - 11⅞	11¾ - 11½	11½ - 11¼
Dutch Guilder	8¾ - 8⅝	8¾ - 8½	8⅞ - 8¾	8⅞ - 8¾	9⅛ - 9	9⅜ - 9¼
Swiss Franc	8⅛ - 8	8⅛ - 8	9⅛ - 8⅞	8⅞ - 8¾	8⅞ - 8¾	8⅝ - 8½
D-Mark	8⅝ - 8½	8⅝ - 8½	9⅛ - 9	9⅛ - 9	9⅛ - 9	9⅜ - 9¼
French Franc	10 - 9⅞	10 - 9⅞	9⅞ - 9¾	10 - 9⅞	10⅛ - 10	10⅜ - 10¼
Italian Lira	13 - 11	13 - 12	13 - 12½	12⅞ - 12¾	12⅞ - 12¾	12½ - 12¼
Belgian Franc	8¾ - 8⅝	8⅞ - 8⅝	9 - 8⅞	9⅛ - 9⅛	9½ - 9⅜	9⅝ - 9½
Yen	8⅛ - 8	8¼ - 8⅛	8⅝ - 8½	8⅛ - 8⅛	8⅛ - 8⅛	8⅛ - 8⅛
Danish Krone	9⅛ - 9⅞	9⅝ - 9½	10¼ - 10	10½ - 10⅜	10⅝ - 10½	10⅝ - 10½
Asian $Sing	8 - 7⅞	8 - 7⅞	9⅛ - 8⅞	8½ - 8⅜	8⅛ - 8⅛	8⅛ - 8⅛

Long term Eurodollars: two years 8⅛-8⅛ per cent; three years 8⅝-8½ per cent; four years 8⅞-8⅞ per cent; five years 8⅞-8⅞ per cent nominal. Short term rates are call for US Dollars and Japanese Yen; others, two days' notice.

FT LONDON INTERBANK FIXING

MONEY RATES

NEW YORK (4pm) Treasury Bills and Bonds

LONDON MONEY RATES

FT-ACTUARIES WORLD INDICES

Jointly compiled by The Financial Times Limited, Goldman, Sachs & Co., and County NatWest/Wood Mackenzie in conjunction with the Institute of Actuaries and the Faculty of Actuaries

LONDON RECENT ISSUES

EQUITIES

FIXED INTEREST STOCKS

RIGHTS OFFERS

BANK OF ENGLAND TREASURY BILL TENDER

WEEKLY CHANGE IN WORLD INTEREST RATES

TOKYO			PARIS		
One month Bills	8⅛	+1/16	Intervention Rate	9½	Unch'd
Three month Bills	8¼	Unch'd	One mth. Interbank	9⅝	+1/16
			Three month	10	+1/32
BRUSSELS			MILAN		
One month	8⅞	+1/16	One month	13⅞	+1/16
Three month	9⅛	+3/32	Three month	13⅛	+1/16
AMSTERDAM			DUBLIN		
One month	8.66	+0.395	One month	10⅞	+1/16
Three month	8.98	+0.125	Three month	10⅞	+1/16

FINANCIAL TIMES STOCK INDICES

	Nov 30	Nov 29	Nov 28	Nov 27	Nov 26	Nov 23	1990 High	1990 Low	Since Compilation High	Since Compilation Low
Government Secs.	82.58	82.34	81.90	82.43	82.51	81.88	84.20	74.13	127.4	49.18
Fixed Interest	90.23	89.65	89.48	89.46	89.26	89.09	92.91	83.80	105.4	50.53
Ordinary	1682.8	1674.8	1686.2	1699.7	1698.6	1712.2	1968.3	1510.4	2008.6	49.4
Gold Mines	160.2	157.6	158.1	157.5	158.7	155.3	378.5	155.0	734.7	43.5
FT-Act All Share	1032.11	1027.16	1031.25	1038.59	1035.23	1042.54	1226.83	962.09	1238.57	61.92
FT-SE 100	2149.4	2135.6	2144.3	2159.5	2151.9	2170.5	2463.7	1990.2	2463.7	986.9
FT-SE Eurotrack 100	958.80	950.93	951.24	948.31	950.43	972.78	1000.00	948.31	1000.00	948.31

MONEY MARKET FUNDS

Money Market Trust Funds

Money Market Bank Accounts

Citibank Savings
St Martins Hse, Hammersmith Grove W6 081-741 4941

Clydesdale Bank PLC
30 St Vincent Place, Glasgow G1 2HL 041 248 7070

Wimbledon & South West Finance PLC
114 Newgate St, London EC1 7AE 071-606 9485

NOTES–Gross rate to those exempt from composite rate of tax. Net actual rate after deduction of CRT. Gr Equiv CAR Gross equivalent to basic rate taxpayers –compounded annual rate. Int Cr frequency interest credited

LONDON SHARE SERVICE

BRITISH FUNDS

"Shorts" (Lives up to Five Years)

Five to Fifteen Years

Over Fifteen Years

Undated

BRITISH FUNDS—Contd

Index-Linked

INT. BANK AND O'SEAS

CORPORATION LOANS

COMMONWEALTH & AFRICAN LOANS

LOANS

Building Societies

Public Board and Ind.

FOREIGN BONDS & RAILS

AMERICANS

AMERICANS—Contd

CANADIANS

Continued on next page

LONDON SHARE SERVICE

● For Latest Share Prices on any telephone ring direct-0836 43 + four digit code (listed below). Calls charged at 44p per minute peak and 33p off peak, inc VAT

BANKS, HP & LEASING

Market Cap. £m	Stock	Price	Week % change	Y'ld Gr's	Last xd	Dividends Paid	City-line
[illegible]	ABN Amro Fl5	£9[illegible]	0.7	8.9	4.9	Aug May	1567
[illegible]	ANZ SA1	135	-9.4	11.3	12.6	Feb July	1698
[illegible]	Abbey National 10p	225	-0.9	3.4	6.8	Apr Oct	5411
555.7	Allied Irish Ord	147xd	-1.3	6.1	19.11	Dec July	1354
[illegible]	Anglo Irish	57	7.5	7.3	30.4	Jan July	1355
[illegible]	Ansbacher (H.) 1p	61	....	5.5	12.3	April	1624
[illegible]	Bancaire Cie Fr100	£47	-0.5	2.8	9.5	May Mar	2202
[illegible]	Banco Bilbao Viz	£13¼	-1.8	5.8	9.12	Dec June	–
499	Bank Ireland Ir£1	146xd	-2.0	9.0	19.11	July Dec	1360
134.4	Bank Leumi	£19½	....	–	–	–	1740
25.0	Bank Leumi (U.K.)	350	....	5.7	6.8	Mar Sep	1740
665.4	Bank Scotland	114	-5.0	5.3	8.10	Dec Jul	1742
93.5	Do. 9¼pc Irrd Pf.	98½	-1.0	12.5	22.10	May Nov	1462
13.4	Bank of Wales	42	....	8.9	8.10	Nov Jun	1743
[illegible]	Barclays £1	370	-3.9	7.1	20.8	Oct May	1754
5.90	Benchmark 20p	11	10.0	9.1	9.4	May Oct	1802
35.7	Brown Shipley £1	224	-0.4	[illegible]	11.6	Jan Aug	1983
40.5	Cater Allen £1	382xd	1.9	8.6	19.11	Jan Aug	2081
8.23	Chancery	39	....	[illegible]	25.6	Jan July	2102
361.2	Commerzbk DM10	£16	-0.4	3.9	27.5	May	1046
[illegible]	Dai-Ichi Kgs Y50	713	-0.1	0.5	4.7	June	3221
[illegible]	Deutsche Bk DM50	£208½	2.8	2.3	17.5	May	2345
173	Espirito Santo	£16¼	3.2	2.3	–	June	5187
203.9	First Nat. Fin. 10p	189	-2.1	9.2	9.7	Mar Aug	2571
46.5	FNFC 6.3pc Cv Pf	96	1.1	8.7	25.6	July	2570
[illegible]	Fuji Bank Y50	844	0.7	0.4	4.7	Dec June	1084
[illegible]	Gerrard & National	312	2.6	8.1	22.10	June Dec	2686
51	Guinness Mahon 10p	80	-5.9	2.4	14.5	July Feb	5074
[illegible]	Hambros 20p	235	....	6.6	25.6	Jan Sep	2812
[illegible]	Do. 7 Spc Cv Pf	97	....	10.3	10.9	Apr Oct	4388
[illegible]	Hong Kong & Shang HK$2.50	30	-1.6	8.5	14.9	October	–
[illegible]	Lloyds Bank £1	373	-1.3	5.7	6.8	Jan Sept	3060
[illegible]	Hong & Shanghai 20p	125xd	1.6	10.9	19.11	Dec June	3088
[illegible]	Henderson Benson Grp	282	-0.4	7.6	20.8	May Oct	3102

[illegible]

Hire Purchase, Leasing, etc.

[illegible]

BEERS, WINES & SPIRITS

[illegible]

BUILDING, TIMBER, ROADS

[illegible]

BUILDING, TIMBER, ROADS — Contd

[illegible]

CHEMICALS, PLASTICS

[illegible]

DRAPERY AND STORES

[illegible]

ELECTRICALS

[illegible]

ELECTRICALS — Contd

[illegible]

ENGINEERING

[illegible]

ENGINEERING — Contd

[illegible]

FOOD, GROCERIES, ETC

[illegible]

HOTELS AND CATERERS

[illegible]

INDUSTRIALS (Miscel.)

[illegible]

INDUSTRIALS (Miscel.) — Contd

Market Cap. £m	Stock	Price	Week % change	Y'ld Gr's	Last xd	Dividends Paid	City-line
5.21	Clearmark 5p	4¼	-5.6	–	9.85	–	2553
1.11	Colorgen Inc. $0.01	7½	....	–	–	–	2188
1.03	Comac Group 5p	16	....	–	25.4	–	2194
42.0	Community Hospital	171	-2.3	4.1	24.9	May Nov	4736
1.39	Co. of Designers 5p	8	....	[illegible]	23.7	Aug Apr	2204
22.0	Computer People 5p	162	-3.6	4.8	24.9	Nov Jun	2209
7.07	Com. Station'y 10p	41	....	13.0	25.6	Aug Feb	2223
418.6	Cookson 50p	115	15.0	10.4	8.10	Nov Jul	2233

[illegible]

INDUSTRIALS (Miscel.) — Contd.

Market Cap. £m	Stock	Price	Week % change	Y'ld Gr's	Last xd	Dividends Paid	City-line
42.4	Sidlaw Group	133	11.8	8.4	11.6	Jan July	4017
553.3	Siebe	286	-1.7	7.0	20.8	Mar Oct	4018
40.5	Silentnight 10p	89	....	7.5	5.11	Jan July	4020
18.0	Silvermines 2½p	56	....	8.9	22.10	Jan July	1476
41.3	Sinclair (Wm.)	215	....	4.0	12.3	Nov Apr	4026
46.9	Sketchley	81	6.6	[illegible]	27.11	August	4033
1,875.7	Smith & Neph. 10p	188	....	5.2	8.10	July Dec	4043
7,916.5	SmithKline Beecham A	597xd	....	2.5	19.11	[illegible]	4836
[illegible]	Do. Equity Units	2595xd	0.5	–	19.11	Apr Jan	4840

[illegible]

INSURANCES

[illegible]

LEISURE

[illegible]

MOTORS, AIRCRAFT TRADES

[illegible]

Commercial Vehicles

[illegible]

LONDON SHARE SERVICE

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MOTORS, AIRCRAFT TRADES — Contd

Components

Market Cap. £m	Stock		Price	Wek % change	Y'ld Gr's	Last xd	Dividends Paid	City-line
9.06	Abbey Panels		453	......	1.0	6.8	Sept Feb	1501
12.0	Airflow Streamlines	y	148	......	5.7	5.11	Jan July	1538
20.2	Bostrom 5p	y	155	−1.3	4.9	8.10	May Nov	1438
407.7	Dowty 50p	β	165	−8.8	7.3	23.7	Mar Oct	2371
87.5	FR Group	β	118	−2.5	7.2	5.11	Dec. July	2627
122.7	Kwik-Fit Hldgs. 10p	β	76	−6.2	4.2	8.10	Nov June	3113
871.9	Lucas Inds.	α	126	−6.0	7.4	5.11	Jun Jan	3232
14.1	Do. Warrants	β	20½	−6.8	–	–	–	3065
27.2	Mid-States 10p	y	56	......	1.8	24.9	November	1845

Garages and Distributors

Market Cap. £m	Stock		Price	Wek % change	Y'ld Gr's	Last xd	Dividends Paid	City-line
6.29	Alexanders 10p	y	16	......	8.3	15.1	March	1562
42.1	Appleyard 10p	β	90	......	11.6	10.9	Oct Apr	1629
1.79	Bletchley Motor 20p	y	60	......	16.7	24.9	Oct Jun	1427
13.4	Caffyns 50p	β	405	......	3.8	25.6	Jan. July	2031
12.1	Central Motor Auctns.	y	91	......	4.8	20.8	October	4930
6.19	Cook (D.C.) Hldgs.	y	25	8.7	5.3	10.9	Feb Oct	2231
67.0	Cowie (T.) 5p	β	53	......	10.6	6.8	Sep Apr	2260
13.4	Dagenham Motors 10p	y	76	1.3	9.2	8.10	Nov May	4954
10.3	Davenport Vernon 10p	y	78	2.6	6.0	25.6	Mar Jul	3912
38.3	Evans Halshaw	β	186	......	8.1	10.9	Oct May	2506
24.3	Gates (F.G.)	β	77	[illegible]	[illegible]	[illegible]	July	[illegible]

NEWSPAPERS, PUBLISHERS

PAPER, PRINTING, ADVERTISING

PROPERTY

PROPERTY — Contd

SHOES AND LEATHER

SOUTH AFRICANS

TEXTILES

TOBACCOS

TRANSPORT

INVESTMENT TRUST

INVESTMENT TRUST — Contd

INVESTMENT TRUST — Contd

Net asset values supplied by County NatWest Wood Mackenzie

FINANCE, LAND, ETC

WATER

OIL AND GAS

OIL AND GAS — Contd

Market Cap. £m	Stock		Price	Wek % change	Y'ld Gr's	Last xd	Dividends Paid	City-line
	Do. Warrants	y	18	−10.0	–	–	–	3389
	Exxon		£25¾	0.7	4.7	7.11	Mr Je Sp De	2521
	Fairhaven Intl 5c.	y	12¼	−2.0	0.4	9.4	May	3501
	Firstland Oil 10p	y	15	......	–	–	–	2578
	Gaelic Resources	y	5	−9.1	–	–	–	4579
	Global Nat Res.		555	1.7	–	–	–	2706

OVERSEAS TRADERS

PLANTATIONS

Rubbers, Palm Oil

Teas

MINES

Central Rand

Eastern Rand

Far West Rand

O.F.S.

Diamond and Platinum

Central African

Finance

Australians

MINES — Contd

Market Cap. £m	Stock	Price	Wek % change	Y'ld Gr's	Last xd	Dividends Paid	City-line
1.40	Westn. Mining 50c.	162	−3.0	7.1	1.10	Nov Apr	4475
0.34	Wickselberg Res 20c.	2	......	–	–	–	–

Tins

Miscellaneous

THIRD MARKET

Market Cap. £m	Stock		Price	Wek % change	Y'ld Gr's	Last xd	Dividends Paid	City-line
0.62	Moray Firth 1p	y	3½	......	–	–	–	3412
1.03	Navan Resources	y	19	−5.0	–	–	–	1185
1.74	Ovoca Gold IR 2p	y	25	19.0	–	–	–	1470
2.78	Oxford Virology 5p	y	20	−4.8	–	–	–	2712
13.2	Paddington 5p		778	......	–	–	–	3117
4.20	Ramsden's (Harry)	y	78	......	8.6	9.7	January	2011
4.02	Restaurinster 5p	y	24	......	–	–	Mar Oct	5228
0.84	Sempernova	y	6	−33.3	–	–	–	1645
3.00	Sleepy Kids 5p	y	15	−6.3	–	–	–	5068
0.33	Systems Connections	y	1¼	......	–	–	–	5341
5.60	Tomorrows Leisure 20p	y	50	4.2	2.7	24.9	October	4248
1.29	UPL Group 10p	y	32	......	–	27.5	Dec. July	4362
2.15	Video Magic Lei. 1p	y	13	−27.8	–	26.1	–	5071
2.40	Vista Ents 5p	y	2½	......	–	–	–	3994
6.71	Wilton Group 1p	y	1½	20.0	–	–	–	3628

NOTES

Stock Exchange dealing classifications are indicated to the right of security names: α Alpha, β Beta, γ Gamma.

Unless otherwise indicated, prices are in pence and denominations are 25p. Yields are based on middle prices, are gross, adjusted to ACT of 25 per cent and allow for value of declared distribution and rights.

Estimated Net Asset Values (NAVs) are shown for Investment Trusts, in pence per share, along with the percentage discounts (Dis) or premiums (Pm –) to the current pre-closing share price. The NAV basis assumes prior charges at par value, convertibles converted and warrants exercised if dilution occurs.

- ● "Tap Stock"
- ‡ Interim since reduced, passed or deferred
- ‡‡ Tax-free to non-residents on application
- ♦ Not officially UK listed; dealings permitted under rule 535(4)(a)
- ¢ USM; not listed on Stock Exchange and company not subjected to same degree of regulation as listed securities.
- ‡‡ Not officially listed.
- # Price at time of suspension
- ¢ Not comparable
- † Cover allows for conversion of shares not now ranking for dividends or ranking only for restricted dividend.
- ☆ Cover does not allow for shares which may also rank for dividend at a future date.
- ‖ No par value

B.Fr. Belgian Francs. Fr. French Francs §§ Yield based on assumption Treasury Bill Rate stays unchanged until maturity of stock. c Cents. e Redemption yield. f Flat yield. k Kenya. C Canadian. E Minimum tender price.

Abbreviations: xd ex dividend; xc ex scrip issue; xr ex rights; xa ex all; xd ex capital distribution.

REGIONAL & IRISH STOCKS

The following is a selection of Regional and Irish stocks, the latter being quoted in Irish currency.

Craig & Rose £1	y	780xd	......
Finlay Pkg. 5p	y	36	−5.3
Holt (Jos) 25p	y	1305	......

IRISH

Cap. 8½% Ln. 1991	£98¼	......
9pc Cap Ln. 1996	£94¼	0.3
Fin. 13% 97/02	£110½	......
Arnotts	167½xd	......

Carrol (P.J.)	154	......
Helton Hldgs. y	40	−7.0
IRG	148	−6.8
United Drug	142½	7.1

TRADITIONAL OPTIONS

3-month call rates

Industrials

	p
Allied-Lyons	40
Amstrad	6
Astec (BSR)	4½
BAT	45
BOC Grp.	39
BTR	29
Barclays	27
Blue Circle	17
Boots	21
Bowaters	41
Brit Aerospace	43
British Steel	10½
Brit. Telecom	22
Cadburys	26
Charter Cons.	37
Comm Union	37
Courtaulds	25
Eurotunnel	48
FKI	5½
FNFC	20
Gen Accident	37
GEC	14
Glaxo	57
Grand Met	44
Guardian	15
GKN	27
Hanson	16
Hawker Sidd	39
ICI	70
Ladbroke	22
Legal & Gen.	29½
Lex Service	28
Lloyds Bank	21
Lucas Inds.	11
Marks & Spencer	18
Midland Bk.	20
Nat West Bk.	18
P & O Dfd.	42
Racal Elect.	14
RHM	23
Rank Org Ord.	49
Reed Intnl.	30
STC	19½
Sears	8½
SmKl. Beecham A	44
TI	37
TSB	18
Tesco	19
Thorn EMI	49
Trust Houses	21
T&N	14
Unilever	50
Vickers	19
Wellcome	58

Property

Brit Land	24
Control Secs.	5½
Land Securities	42
MEPC	38
Mountleigh	11

Oils

Astra Petlm.	3½
Brit Petroleum	28
Burmah Castrol	44
Conroy Petlm.	28
Gaelic Res.	2
Premier	8½
Shell	48
Tuskar Res.	6
Ultramar	31

Mines

Lonrho	21
RTZ	48

This service is available to companies whose shares are regularly traded in the United Kingdom for a fee of £1,050 a year for each security shown, subject to the Editor's discretion.

FT Share Service

The following changes have been made to the FT Share Information Service:

Additions: ABI Leisure (Section: Motors).
Doral Resources NL (Mines-Australians).
Jupiter European Inv. Tst. (Ord. & Warrants) (Investment Trusts).
Pancontinental (Mines-Australians).
Scottish & Mercantile Inv. Tst. Ord. (Investment Trusts).
Scottish Cities Inv. Tst. Ord. (Investment Trusts).
Wace Group 8% Cnv. Prf. (Paper, Printing, Advertising).

Deletions: Bond International Gold (Mines-Miscellaneous).
Crystalate (Electricals).
Equity & General (Motors).
Hughes (H.T.) (Industrials).
Lincoln House Warrants (Industrials).
Nationwide Legal Servs. (Americans).
Ratners Cnv. Cum. N/V Rd. Pf. (Drapery & Stores).
Sechura Inc. (Canadians).

4pm prices November 30

NEW YORK STOCK EXCHANGE COMPOSITE PRICES

12 Month High	Low	Stock	Div.	Yld.	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
		- A - A - A -								
37⅛	9½	AAR	.48	4.0	7	367	12	11½	11⅞	+ ⅛
9¼	7¾	ACM n	1.01	12		342	8¾	8½	8⅝	- ⅛
11¼	8½	ACMIn	1.26	13		1278	10	9¾	9⅞	+ ⅛
9¼	6½	ACM M n	1.01	13		356	7⅝	7⅜	7½	
12⅜	10	ACMMM	1.50	13		130	11⅝	11½	11½	- ⅛
11⅞	8⅞	ACM Sc	1.26	13		2109	9⅝	9½	9½	
9⅝	7¼	ACMSp	1.01	12		615	8½	8¼	8⅜	
24⅝	15⅞	AL Lab	.16	.7	18	278	22⅛	21¾	22	
5¼	1	AM Intl				1919	1½	1⅜	1⅜	
20⅝	4⅝	AM In pf	2	24.		113	8½	8¼	8¼	
70¼	39⅜	AMR			14	5318	47⅝	44¼	47¼	+3
26½	25	ANR pf	2.67	10		1	25½	25½	25½	
24⅝	22½	ANR pf	2.12	9.0		25	23⅝	23⅜	23⅝	+ ⅞
4	1⅜	ARX				138	1⅝	1½	1½	
72¼	38¼	ASA	3	7.2		851	42⅝	41¼	41½	- 1¼
3½	3	ATTC wt				2889	3	d 2¾	3	
45⅝	31¼	AbtLab s	.84	1.9	20	6111	44¼	42	43⅝	+ 1⅜
14	10⅞	Abitibi g	.50			2	11	11	11	
11⅝	4⅝	AcmeC	.40	7.3	13	31	5½	5	5½	+ ½
9⅝	5	AcmeE	.32	6.1	9	27	5⅝	5¼	5¼	
32¼	18⅞	Acuson s			22	3345	27¼	25⅞	27¼	+ 1¼
16⅞	14¼	AdaEx	1.72e	12		182	14⅝	14⅜	14⅝	+ ¼
15⅜	10	Adobe				100	10¾	10½	10¾	
20¼	16	Adob pf	1.84	11.		28	17½	17⅜	17½	+ ⅛
21⅞	19⅛	Adob pf	2.40	12.		80	20	19¾	20	
11⅞	3⅝	AMD				8306	4⅜	4	4⅛	+ ⅛
32⅛	13	AMD pf	3	20		150	15	14½	15	+ ¼
9¼	1⅝	Advest	.16	6.4		235	2½	2⅜	2½	+ ⅛
62	29	AetnLf	2.76	7.1	9	5535	38⅞	38	38⅞	- ⅛
12⅝	6¼	AhlPb	.24	3.0		1006	8¼	7⅝	8¼	+ ½
21½	10⅝	Ahmans	.88	6.8	5	3048	13	12⅝	13	- ⅛
3⅛	1⅞	Aileen			8	26	3	2⅞	3	

Continued on Page 35

NYSE COMPOSITE PRICES

Continued from previous Page

12 Month High	Low	Stock	Div.	Yld.	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
8⅛	5⅝	RangrO	.05e	.5	19	4957	7	7	7	
38½	16⅜	Raycm	.32	1.6		1405	20¼	19½	20⅛	+ ⅛
22⅝	14⅞	RJamF	.24	1.5	5	17	16⅛	16⅛	16⅛	− ⅛
28½	16¾	Rayonr	3.60	18.	5	25	20	19⅝	19⅝	− ⅜
2⅞	1⅛	vjRaytc			2	22	1½	1⅜	1½	
71¼	57¾	Raythn	2.40	3.5	8	865	69¼	67½	69½	+1⅝
27⅝	21	RdrDg	n .60	2.3	16	541	26	25¾	25⅞	
5	1¼	RdgBas				548	1⅜	1¼	1⅜	
16¼	11⅝	REIT	1.42	11.	9	31	12⅜	12½	12⅝	+ ⅛
15½	12⅛	RltRef	1.72	13.	7	19	12⅞	12⅝	12⅞	+ ⅛
7¼	4⅜	RecnEq				36	4⅝	4⅝	4⅝	− ⅛
20	8¼	Reebok	.30	2.7	7	2856	11⅛	10⅝	11	
11⅛	1⅝	Reece	.05j			17	2¼	2⅛	2¼	− ⅛
½	11-64	Regal				55	13-64	11-64	3-16	
15	8⅞	ReichTg	1.52	18.	5.	37	8⅝	8¼	8½	+ ⅛
8⅝	4⅛	RelGrp	.32	6.9		326	4⅝	4⅝	4⅝	+ ¼
30⅜	20⅛	Repsol	n.88e	3.9		1898	21⅝	21¼	21⅝	+ ¼
6	2¾	RepGyp	.19t	5.8		40	3¼	3⅛	3¼	+ ⅛
52⅞	37¼	RepNY	1.32	2.9	6	257	46⅛	44⅞	45⅛	+ ⅜
44	38¾	RNY	pfB3.65e	9.2		10	39½	39½	39½	− ½
7⅜	1⅛	Rxene				35	1⅝	1⅜	1⅝	+ ⅛
27⅞	11½	RayRay	.84	5.6	7	162	15⅜	15⅛	15⅛	− ⅜
70	48½	RayMB	1.80	3.5	7	3413	51¾	49⅞	51½	+1⅝
67⅞	56¼	RP Ror	n.84	1.4		489	62	61½	62	+ ¼
19	8⅞	RhP	pfA1.80e	18.		7	10	10	10	+ ⅛
22	9¼	RhnPl	n1.60e	15.		37	10⅜	10	10⅜	+ ¼
38⅝	29½	RiteAid	.90	2.6	14	581	35⅛	34⅞	35⅛	+ ⅞
11-32	5-128	RvrOak				20	3-64	3-64	3-64	
18¼	8⅛	RobtHf			10	119	10⅜	10⅛	10⅜	+ ⅛
5½	3⅞	RotCec	n			118	4⅛	4⅛	4⅛	
22⅛	16⅞	RochG	1.56	8.2	10	682	19⅛	18⅞	19	+ ⅛
43½	24⅝	RochTl	1.48	5.1	17	126	28⅞	28½	28¾	− ⅛
21½	15¼	RckCtr	1.92	10.	18	811	18⅞	18¼	18⅞	+ ⅝
28¾	19¾	Rockwl	.86	3.2	10	3768	27	26	26⅞	+ ⅝
7⅜	3½	RodRen			18	5	3⅞	3⅞	3⅞	− ⅛

[illegible]

– X–Y–Z –

12 Month High	Low	Stock	Div.	Yld.	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
60½	28	Xerox	3	8.8	6	5787	34⅞	34	34¾	+ ⅝
32⅝	13	XTRA	.72	5.2		286	13¾	13¾	13¾	
25	12½	XTRA	pf1.94	14.		120	13¾	13½	13½	
4	5-16	Zapata				284	11-16	9-16	⅝	
9⅛	3	Zemex				33	3¼	3	3¼	+ ¼
13¾	4	ZenithE				659	6⅝	6¼	6⅝	
19⅝	8⅞	ZenNtl	.88	8.1	7	828	11⅛	10⅞	10⅞	− ⅛
7¼	4⅞	Zenix	.93	20.		298	4⅞	4½	4⅝	
17⅛	9⅞	Zero	.40	3.4	12	152	11¾	11	11⅝	+ ⅝
51⅛	29⅝	Zurnin	.88	2.8	14	384	32	31⅝	31⅞	+ ⅛
12⅝	10⅛	Zweig	1.18e	11.		378	10⅜	10⅝	10⅜	+ ⅛
10	7⅞	ZweigTl	.84	9.6		1439	8⅞	8⅝	8¾	

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Sales figures are unofficial. Yearly highs and lows reflect the previous 52 weeks plus the current week, but not the latest trading day. Where a split or stock dividend amounting to 25 percent or more has been paid, the year's high-only range and dividend are shown for the new stock only. Unless otherwise noted, rates of dividend are annual disbursements based on the latest declaration.

a-dividend also xtra(s). b-annual rate of dividend plus stock dividend. c-liquidating dividend. cld-called. d-new yearly low. e-dividend declared or paid in preceding 12 months. g-dividend in Canadian funds, subject to 15% non-residence tax. i-dividend declared after split-up or stock dividend. j-dividend paid this year, omitted, deferred, or no action taken at latest dividend meeting. k-dividend declared or paid this year, an accumulative issue with dividends in arrears. n-new issue in the past 52 weeks. The high-low range begins with the start of trading. nd-next day delivery. P/E price-earnings ratio. r-dividend declared or paid in preceding 12 months, plus stock dividend. s-stock split. Dividends begin with date of split. sls-sales. t-dividend paid in stock in preceding 12months, estimated cash value on ex-dividend or ex-distribution date. u-new yearly high. v-trading halted. vi-in bankruptcy or receivership or being reorganised under the Bankruptcy Act, or securities assumed by such companies. wd-distributed. wi-when issued. ww-with warrants. x-ex-dividend or ex-rights. xdis-ex-distribution. xw-without warrants. y-ex-dividend and sales infull. yld-yield. z-sales in full.

AMEX COMPOSITE PRICES

4pm prices November 30

[illegible]

NASDAQ NATIONAL MARKET

4pm prices November 30

[illegible]

– X–Y–Z –

Stock	Div.	P/E	Sales 100s	High	Low	Last	Chng
XL Dta		5	154	8	7¾	7¾	− ¼
XOMA			2284	19	17¾	18¼	+ ¼
Xilinx			068	12¼	12¼	12¼	
YanEnS	1.62	16	153	21	20¼	20¼	− ¼
YelowF	.94	27	1206	24¼	22⅞	24⅛	+ 1
YorkRs		11	357	9¼	8¼	8⅞	− ¼
Zeos		17	11	14¼	13¼	14¼	+ ¾
ZionBc	1.44	7	57	29¼	28¼	29¼	+ ⅝

MONDAY INTERVIEW

Strategist who knows the market

Sir Dennis Weatherstone, chairman of J P Morgan, talks to **David Lascelles**

J P Morgan has always taken a lofty view of world events, as befits what most people consider to be America's classiest bank. This may explain why Sir Dennis Weatherstone, its chairman, responds with studied calm to the question of whether he is worried by all the turbulence in the world banking industry, particularly in the US.

He objects to the word "worried".

"I would prefer a less emotive term," he says. "It is correct to be concerned. If you're not, you don't know what's going on."

What particularly concerns him is that the banking system is vulnerable to "accidents" and that the US recession may be deeper and longer than people expect – all of which will put bank management on its mettle. But he is keen to remove any hint of alarm from his words. "This is not another savings and loan problem in the making."

If Sir Dennis sounds more like a central bank governor than the head of one of the world's largest commercial banks, that is in keeping with the Morgan style. For years, Morgan has cultivated an image of strength and quality, and it is in times like these that it pays off. The group, and its main operating arm Morgan Guaranty Trust, has the strongest balance sheet and client list of any big US bank. Alone among the giant New York institutions, Morgan has been spared the disturbing rumours which have been swirling around since the summer.

But if this provides some quiet satisfaction for Sir Dennis, he does his best to conceal it. "We should not have any competitive glee because we have a real interest in seeing that the US banking system remains strong. That attitude should extend outside the US as well because many banks have their balance sheets in a local currency and the US dollar."

Sir Dennis has other reasons for feeling satisfied. His recent knighthood crowned one of the more remarkable careers in world banking and put him in the possibly unique position of becoming a titled US bank chairman.

London-born, he joined the London branch of the Guaranty Trust Company, a predecessor bank, at the age of 16, back in 1946. He demonstrated his skills as a foreign exchange trader early on, and this advanced him into management and brought promotion to New York in 1971. The next 10 years saw his rapid rise up a career ladder which combined his knowledge of the market with his managerial abilities. After a spell as group treasurer he became vice-chairman 10 years ago and finally at the beginning of this year, chairman.

His slight build and unassuming style do not mark him out as one of the most powerful figures in US banking. But those who know him well say his strength lies in a combination rare in the financial world: a feeling for the market and an ability to plot and manage strategy.

Morgan's soundness will provide a good foundation for his term in office. But Sir Dennis still faces the challenge of positioning Morgan in what are, by any standards, very testing times.

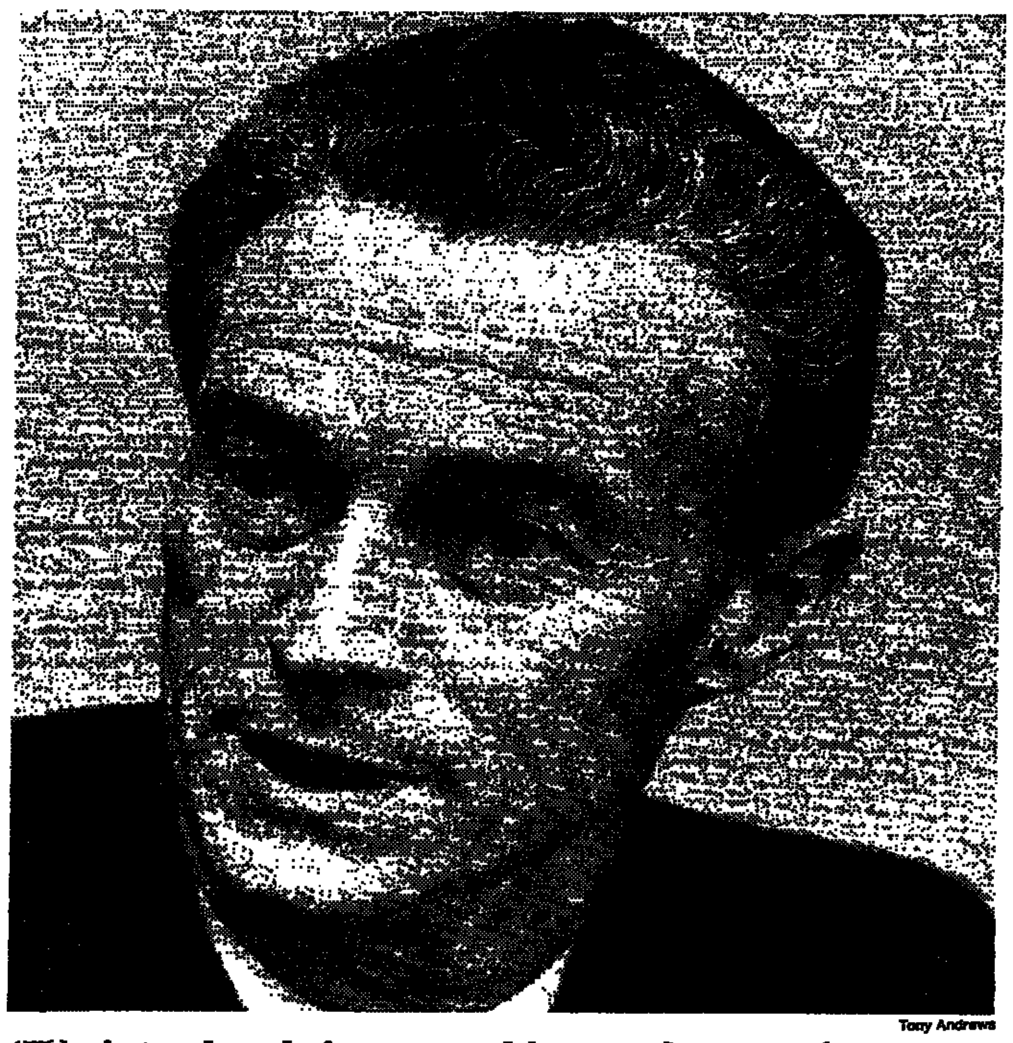
Although Morgan's business is the envy of its peers, it operates in a rarified world of large but fickle multinational companies and volatile markets. Morgan has no retail banking business, therefore none of the high street banking hinterland which other banks can fall back on when times are hard. Some observers have seen in this a fundamental weakness in the Morgan strategy: it risks being left high and dry in a market where many corporations can handle their financial needs themselves, and even have higher credit ratings than banks. J P Morgan lost its triple A rating last year, though Morgan Guaranty managed to hold on to it.

The answer, according to Sir Dennis, is to ensure that the bank can still supply a wider range of services and on more advantageous terms than their clients can obtain themselves or elsewhere. Having the right expertise, and knowing all the world's main markets, is therefore crucial.

"We think, for us, there will continue to be opportunities in financial centres around the world based on the increasing levels of world trade, ease of travel and communications. We want to help our clients manage the complexities: exchange rates, interest rates, tax, and accounting."

In order to widen its range of services, Morgan has been at the forefront of pressure for regulatory change in the US, particularly to enable commercial banks to get into the securities business. In a milestone decision, Morgan was recently the first US bank to obtain Federal Reserve approval to trade corporate equities. But Sir Dennis thinks regulatory reform must proceed well beyond one-off Fed decisions and address fundamental changes.

"These are very necessary. Hopefully they will take place in an orderly fashion, and quickly. From the regulatory viewpoint we should not tackle the issues one by one. We need a complete overhaul of the system, not because of a crisis but because geography and product limitations make less and less sense."



Tony Andrews

'We intend to bring something to the party'

But as anyone who witnessed the bloody aftermath to London's Big Bang knows, the entry of banks into the securities business can have disastrous consequences. Is Sir Dennis not about to run the same risks?

"Every institution should have a well-defined strategy.

PERSONAL FILE

- **1930** Born in London.
- **1946** Joined London branch of Guaranty Trust Co.
- **1971** Assigned to New York.
- **1972** Senior vice-president in charge of foreign exchange and international treasury.
- **1977** Executive vice-president and treasurer.
- **1979** Vice-chairman.
- **1987** President.
- **1990** Chairman, knighted.

We intend to bring something to the party and not just be another organisation that can provide underwriting and trading skills."

As it happens, Morgan did not throw itself into Big Bang like many other US banks by buying a stockbroking firm. Instead, it built up its own investment banking operations itself. "We prefer to use our own people and resources. We wanted to be sure we would be in a value-added situation in a new market."

The new powers which Morgan has been granted should enable it to build up a wider relationship with its clients. "We expect to get even closer to the chief executives and chief financial officers of corporations worldwide and work with them on their overall financial strategy, for which we can execute as well as advise."

Ironically, though, Morgan's breakthrough into new fields came just as the conventional banking market seems to be brightening up for the first time in over a decade. The problems of the banking industry have taken a lot of the pressure off margins by reducing the level of competition, particularly from the hard-pressed Japanese banks.

"They will become more focused than before," predicts Sir Dennis of the Japanese. "They were a source of funds which led to some benefits, and some problems, for example price cutting. But they will be more discriminating now. They will have to go through the same value-added analysis as everyone else."

As margins widen again and the cost of borrowing goes up, the surviving banks will obviously benefit. But Sir Dennis argues that this will also impose a needed discipline on borrowers. "Users of funds will have to become more discerning. That's to the good as well. Highly leveraged transactions produced some genuine excesses to which the easy availability of funds contributed."

The prospect of a healthier loan market has even prompted Morgan to consider increasing its own lending – something it has done very little of, partly because it specialises in more sophisticated banking services which carry larger fees; partly, too, because of the risks. But though analysts have noted a rise in Morgan's reported loans, Sir Dennis is wary of confirming that a potentially important change in policy is taking place. Morgan's shareholders and depositors might not think that this was the best time to boost lending – and there are a lot of people Morgan does not want to lend to.

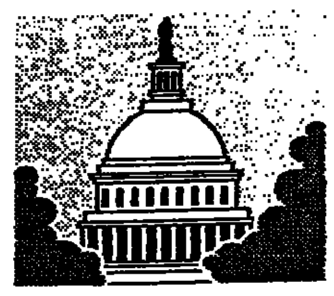
"There's not a great deal of change at the moment," says Sir Dennis. "But we do see select opportunities for loans as some banks shrink their balance sheets."

Neither the recovery of the loan market nor even regulatory reform will be enough to head off what Sir Dennis predicts will be a major restructuring of the US banking industry in the years ahead. He expects to see a big shrinkage in the number of US banks as they seek strength in merger. "Five years from now there will be considerably fewer banks overall. There will be some consolidation among money centre banks."

Whether or not Morgan itself will be forced to join the consolidation, if only out of self-defence, is a moot point. Sir Dennis holds open that remote, almost unthinkable possibility. "One shouldn't assume that we wouldn't be opportunistic. We'll obviously watch what's going on and examine all avenues."

Flawed case for economic optimism

When the US Treasury Secretary implores banks to keep on lending to their good customers, you can be sure that economic prospects are poor. But how poor? Is the US facing a quarter or two of mildly negative growth followed by the speedy return to economic health predicted by the White House? Or should America prepare for a serious downturn along the lines of 1973-75 and 1981-82?



MICHAEL PROWSE
on America

Predictions seem somehow futile. The economy lies in the shadow of the Gulf crisis. Prospects for growth, inflation and jobs will depend on the outcome of diplomatic missions in coming weeks. The only certainty is that the economy took a sudden turn for the worse in October and November. Consumer confidence, industrial production and factory employment are sharply down. Initial unemployment insurance claims are up. Core inflation is subdued. The trade deficit narrowed despite higher oil imports. Consumer spending and personal incomes are softening, although not yet sharply. The leading and coincident indicators of economic activity have fallen for four months running.

It undoubtedly adds up to what Mr Alan Greenspan, the chairman of the Federal Reserve, last week dubbed a "meaningful downturn". But it does not necessarily imply a serious recession: the latest OECD forecast, which was released with the usual inexplicable two-month delay on Friday, predicts nothing worse than a temporary slowdown in the rate of growth. Other respected forecasters remain optimistic.

Ms Gail Fosler of the Conference Board in New York, for example, argues that recent production cuts "exceed in magnitude the likely decline in final demand and will reverse in the first half of 1991". In her view the current weakness is still the result of regional and sectoral problems. Her biggest fear is that a climate of unnecessary pessimism will eventually prove self-fulfilling.

The case for optimism deserves a hearing. The first and incontrovertible bull point is that the rise in inflation and oil prices (so far) is much less severe than in 1973-75 or the early 1980s. There is thus no prospect of the kind of monetary policy crackdown that provokes a violent adjustment in the real economy. Quite the contrary: the Fed has been easing for months and will continue to do so, even if the dollar slides further.

A slightly more suspect ground for optimism is the improvement in the US's external competitiveness and the consequent rapid growth in US exports. This has helped ensure that the chill of this downturn is felt mainly in areas, notably the east and west coasts, where the Reagan service economy once boomed. Yet exports are still a low percentage of GNP and were supported as much by the booming world economy as by the falling dollar. As world growth falters, US exporters will find the going gets tougher, regardless of the dollar's value.

Then there is industry's tight control of inventories. In most recessions, savage cuts in production occur because companies permit a crippling accumulation of unsold goods. But the inventory-to-sales ratio is close to an historic low, having trended down for eight years. This leanness is encouraging, but far from a guarantee of clement weather: better stock control technology means that companies need fewer inventories even in good times. In any case, a sharp decline in the inventory to sales ratio in the early 1970s did not prevent the worst recession since the Great Depression.

Inventory control is bolstered by a remarkable degree of wage flexibility. There seems no prospect of a lurch into stagflation being intensified by a British-style demand for higher pay. The unions are simply too weak. Many groups in the US, especially young blue collar workers, have quietly accepted real wage cuts throughout the past decade.

These are some of the reasons why most forecasters expect a fairly shallow recession: the consensus view is that the peak-to-trough decline in GNP is unlikely to exceed about 1½ per cent. If this is the case, the 1990-91 recession will resemble the mild downturns of 1960-61 and 1969-70: a reminder that the business cycle is alive and kicking but not a wrenching dislocation.

But there are troubling features of the present downturn which could imply a much bleaker outlook – even assuming war is avoided in the Gulf. America has never entered a modern recession with its fiscal and monetary room for manoeuvre constrained by large domestic and external deficits. Nor has the post-war economy ever laboured beneath so heavy a debt burden. This has given rise to fears of a "balance sheet" recession in which the inability of individuals and companies to service loans leads to the fire sale of assets. This in turn wrecks the collateral of sound companies sparking a chain reaction of default.

Last week the OECD scoffed at such alarmism, arguing that bank balance sheets are not so weak as to suggest an impending "credit crunch". It also said concerns about corporate debt are exaggerated.

But one remains uneasy. One cannot forget that it was a flawed banking system, rather than inflation, oil, or inventory mismanagement, that lay behind the prolonged depression of the 1930s. It seems inconceivable that the authorities today could allow the kind of monetary implosion which sank the US economy in the inter-war years. But it is unfortunately all too possible that the debt burden will prevent a healthy recovery from recession and condemn the US economy to years of stagnation.

BASE LENDING RATES

	%		%		%
ABN Bank	14	Coutts & Co	14	NatWestminster	14
Adam & Company	14	Cyprus Popular Bk	14	Northern Bank Ltd	14
Allied Trust Bank	14	Dunbar Bank PLC	14	Nykredit Mortgage Bank	14½
AIB Bank	14	Duncan Lawrie	14	Provincial Bank PLC	15
● Henry Ansbacher	14	Equatorial Bank plc	14	Roxburghe Bank Ltd.	14½
Associates Cap Corp	15½	Exeter Trust Ltd	14½	Royal Bk of Scotland	14
● B & C Merchant Bank	14	Financial & Gen. Bank	14	Royal Trust Bank	14
Bank of Baroda	14	First National Bank Plc.	16	● Smith & Williamson Secs.	14
Banco Bilbao Vizcaya	14	● Robert Fleming & Co.	14	Standard Chartered	14
Bank Credit & Comm	14	Robert Fraser & Ptnrs.	14½	TSB	14
Bank of Cyprus	14	Girobank	14	Unibank plc	14
Bank of Ireland	14	● Guinness Mahon	14	● United Bk of Kuwait	14
Bank of India	14	HFC Bank plc	14	United Mizrahi Bank	14
Bank of Scotland	14	● Hambros Bank	14	Unity Trust Bank Plc.	14
Banque Belge Ltd	14	Hampshire Trust Plc	14½	Western Trust	14
Barclays Bank	14	Heritable & Gen Inv Bnk.	14	Westpac Bank Corp.	14
Beachmark Bank	14	● Hill Samuel	14	Whiteaway Laidlaw	14
Brit Bk of Mid East	14	C. Hoare & Co.	14	Yorkshire Bank	14
● Brown Shipley	14	Hongkong & Shangh	14		
CL Bank Nederland	14	● Leopold Joseph & Sons	14		
● Charterhouse Bank	14	Lloyds Bank	14		
Citibank NA	14	Meghraj Bank Ltd	14		
City Merchants Bank	14	McDonnell Douglas Bnk	14		
Clydesdale Bank	14	Midland Bank	14		
Comm. Bk. of London Plc	14	Mount Banking	14		
Co-operative Bank	*14	Nat Bk. of Kuwait	15		

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JOTTER PAD

CROSSWORD

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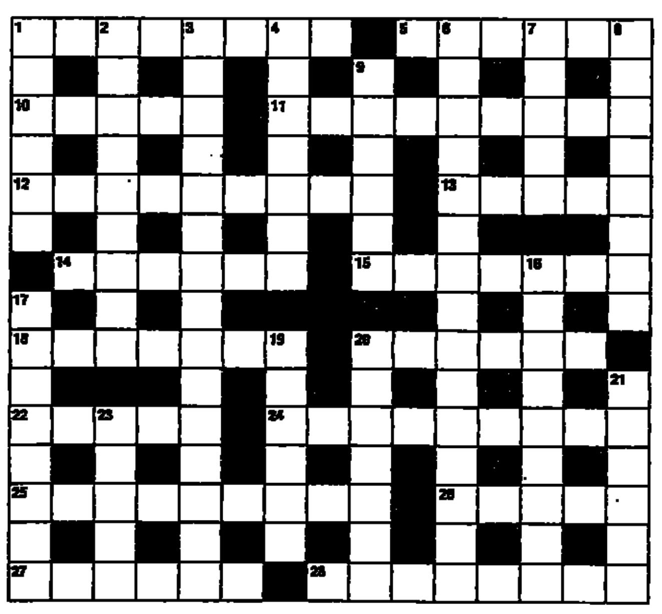


ACROSS

1 Way murderer may become pub entertainer (8)
5 Virtuous it is said but sought after (6)
10 One taking profit once more (5)
11 Sudden fear about Grey's eulogy? (9)
12 Lie told to keep children quiet perhaps (5,4)
13 Drink knocked back in royal fashion (5)
14 Girl capturing another with gun (6)
15 Instrument found in wine-cask (7)
18 First-year student is more up-to-date (7)
20 Hire charge for book in genuine binding (6)
22 Legally preclude some honest operation (5)
24 Where abandoned little swine may end up? (6,3)
25 Against intimate union causing embarrassment (9)
26 Point to counterpart coil (5)
27 Pace bringing right back into team (6)
28 Players of ripe years needing to be wrapped up (8)

DOWN

1 Sticks to one county (6)
2 Revive innermost part in tree perhaps (9)
3 One per cent of girl in confinement? (5,2,3,5)
4 Clear up former open country (7)
6 Having noble relation (like telegraph poles?) (6,9)
7 Young person having second thoughts about outfit (5)
8 Time of year to make speech or do the wallpapering (8)
9 Old coins provided by financial backers (6)
16 Bird taking gentle stroll on track (9)
17 The crimes of receivers (8)
19 Put down again when trying to ring up queen (6)
20 Rearrange tour and rush round building (7)
21 Mean to be fashionable nurse (6)
23 Voice of some unfortunate northerner (5)

The solution to last Saturday's prize puzzle will be published with names of winners on Saturday December 15.

Baker may try to be bold

JUSTINIAN

THE principal focus of the current parliamentary session was always going to be the Criminal Justice Bill, with its pronounced emphasis on "punishment in the community". Its genesis was the White Paper, *Crime, Justice and Protecting the Public*, published in February but mainly authored under Mr Douglas Hurd's mostly liberal home secretaryship. Its controversial provisions, that emerged last month, had been inherited by the hapless but somewhat hawkish Mr David Waddington. With the arrival of Mr Kenneth Baker to pilot the bill through parliament, there is keen speculation about how much of the bill will survive the lively debates in committee which began last week – and about what additions peers and MPs may seek to have included in the legislation.

One expected attempt to amend the bill will do no more than provide a momentary agitation. Given the personal support of Mr Waddington, those in favour of the restoration of capital punishment will find no comfort from either the new home secretary Mr Baker or, significantly, the new prime minister Mr John Major. Both have consistently gone through the abolitionist lobby whenever the issue of the death penalty has been debated, as it has on more than a dozen occasions since final abolition in 1969. There will be no impetus to the hangers' lobby from cabinet, such as Mrs Thatcher gave by her unyielding espousal of capital punishment. Indeed, an amendment to replace the mandatory life sentence for murder by a discretionary sentence of life imprisonment stands a better chance of acceptance.

An attempt from the other spectrum of the penal affairs lobby – the penal reformers – to amend the bill may fare a little better. Support among those involved in the criminal justice system is growing for the idea of a Sentencing Council to plan and direct sentencing policy. Within such a council, judges and magistrates would rub shoulders with representatives from the prison service, probation, social workers and academic criminologists. No longer would it be left to the senior judiciary exclusively to decide what sort of sentencing policy and what size of prison population the country should have. The Sentencing Council would be the forum for formulating policy and issuing guidelines to the courts.

There's the rub. The judiciary has declared its hostility to the whole idea, perceiving it to be a direct threat to the independence of individual sentencers. The pressure, however, to put some brake on the practice of the courts, which continue to create the largest prison population of any country in western Europe, is mounting.

The new home secretary will become the recipient of Lord Justice Woolf's report on his inquiry into prison disturbances, due to be in Mr Baker's hands by the year's end. The aftermath of the events at Strangeways prison in April has been as destructive and distressing in its impact on prisoners, their families and the prison service as the incident itself. Normality has certainly not returned to the penal system.

Informed opinion has been that Mr Waddington has not been enamoured by the broad sweep of Lord Justice Woolf's inquiry, with its helpful series of public seminars on a wide range of issues touching on the future of the civilised prison system. Mr Waddington was inclined only to respond to recommendations that would deal with the immediate causes for the worst riots – indeed the mutiny – in British penal history. A better structure to prison administration is needed to prevent or scotch any similar disturbances.

The danger facing Mr Baker is the Home Office's declared view that the unrelieved overcrowding in prison since 1970 is at the root of all the troubles besetting the prison system in the past two decades. Prisons have been overcrowded since the war; it has infected every facet of prison life. But the fact is that conditions in the long-term and training prisons have, on the whole, been good in contrast to the overcrowded local establishments, such as Strangeways.

Yet until the eruption in April the most serious incidents – and there have been many in the past 10 years – have been in establishments where conditions were good, while the inmates of local prisons, locked up with two or three others for most of the day, with their own ordure for company, endured their fate with a near stoical passivity. It is for the reason that overcrowding is not the only vice of the system that has led Lord Justice Woolf to canvass wider solutions to the problems of the prison system.

The temptation of government is to seek some way of patching up the prison system. The hope of penal reformers is that the new home secretary will bring a more comprehensive and imaginative approach – as he did with education – to the issues.

A bold suggestion that might attract Mr Baker is the idea of setting up an agency responsible for giving effect to all the orders of the criminal courts – a Commission for the Enforcement of Criminal Justice. That means administering through a single comprehensive authority "punishment in the community" as well as running the prisons.

JAPANESE INDUSTRY

Once derided as a nation of copy-cats, Japan is moving to the forefront of technological advance. **Stefan Wagstyl** reviews the success achieved so far and considers the important commercial, political and intellectual challenges ahead

The science of superiority

A STATUE of Thomas Edison, surrounded by the busts of lesser gods of the pantheon of electronics, stands outside the central laboratories of Matsushita Electric Industrial.

The figure was put up as a tribute to the technological debt which Japan owes the west and as an inspiration for Matsushita's researchers.

Once derided in the US and Europe as a nation of copycats, Japan is increasingly moving to the forefront of technological and scientific advance.

Companies which used to rely mainly on cutting costs to gain the edge over western rivals now see product superiority as the key to the future. They intend to achieve it through combining the strengths of their laboratories with improved market research. As before, they will draw much of their inspiration from the work of scientists in the US and Europe. But they hope home-grown Japanese research will make an increasing contribution to the advance of science – for reasons of national pride and trade politics as well as of commerce.

Japan's technological position is greatest in the kind of research and development which flows from the factory floor – the constant refinement of existing ideas. Sony last year launched 1,500 new products – an average of five a day.

But Japanese researchers are also moving close to the frontiers of knowledge in the application of science to industrial innovation. The miniaturisation of microchip circuits has, for instance, reached the point at which, in some respects, their operation is no longer governed by the laws of everyday physics but by those of quantum mechanics.

Even in pure science, Japan is no longer as far behind as it was even 10 years ago. Japanese scientists cannot match the US or leading European countries in the breadth of their work. Some still repeat the familiar tale that they will never catch up because Japanese culture stifles creativity. They grumble Japan has won only five Nobel science prizes. But in more and more fields – including X-ray astronomy, lasers and some areas of quantum physics – Japanese researchers are acknowledged as equals by their foreign peers.

The 19th Century founders of modern Japan saw the acquisition of knowledge as the key to industrial advance. That idea remains at the centre of thinking about science and technology. The country is mercifully free of the belief that science is demeaned by being put to practical use. "They are at the other end of the spectrum from the UK," says a British scientist in Tokyo.

The most important element behind Japan's technological achievement is its highly-trained workforce. "Parents, schools and universities all contribute. We do the rest," says Mr Noritaka Karauchi, managing director of cable-maker Sumitomo Electric Industries. Japanese children regularly come near the top of international comparative tests. Companies train their recruits with care, safe in the knowledge that their investment will not be wasted as long as lifetime employment is the norm.

Middle-aged managers complain that young recruits are less disciplined than their predecessors. However, there were much greater worries, which proved groundless, about the generation of students who took to the streets in the late 1960s and early 1970s. Today's fears are also almost certainly exaggerated.

A more serious concern may be that amid chronic job shortages, manufacturers will lose potential recruits to banks and other high-paying employers. The number of students entering engineering faculties peaked three years ago. But if there is some decline, it is from an overwhelmingly high peak – Japan produces about as many engineering graduates as the US.

The flow of talented people does not by itself explain Japan's technological advance. The Soviet Union has good schools but a bankrupt industry. The way people are organised matters enormously. The Japanese government does much to orchestrate a belief in technology as the key to the future, for example through "visions" published by the Ministry for Trade and Industry.

MITI sponsors projects designed to fill gaps in Japanese know-how, notably the VLSI scheme of the late-1970s which propelled Japanese companies to the forefront of memory microchip manufacture.

However, MITI's role can easily be exaggerated. Government accounts for just 20 per cent of the national research and development budget and MITI's share is just 10 per cent of that.

Government supports industry in other ways – until recently it presided over a restricted financial system which, before its liberalisation, directed funds to manufacturing companies on preferential terms. There are wide-ranging grants and low-cost loans to encourage small companies to invest in new technology.

But it is not nations which compete but companies. In Japan the greatest commercial success and the greatest technological advances are concentrated in specific industries, where giant groups compete ruthlessly. Electronics heads the list, which includes cars, machine tools and cameras. In industries where competition has been restricted (through regulation), Japanese companies often lag western rivals.

Competition does not rule out collaboration, especially at pre-competitive stages of research. While MITI-led national projects make headlines, much more co-operative work is carried out among big companies and their customers and suppliers – often channelling advanced technology from the laboratories of the corporate giants to small workshops.

Investment in research is growing. The proportion of GNP spent annually on research and development overtook that of the US in the early 1980s and is now 2.9 per cent, the highest in the world.

The results are reflected in Japan's share of the world's exports of high-technology products which rose from 13 per cent in 1980 to 21 per cent in 1987, according to the Japan External Trade Organisation. Since then it has grown to an estimated 25-30 per cent.

Japanese companies regularly fill half the top 10 spots in lists of recipients of US patents. Scientists publish about 10 per cent of scientific papers, up from 5 per cent in 1975. The number of foreign researchers coming to study in Japan doubled to 84,000 in the three years to 1989.

Nevertheless, if it is to maintain its advance, Japan must meet important challenges:

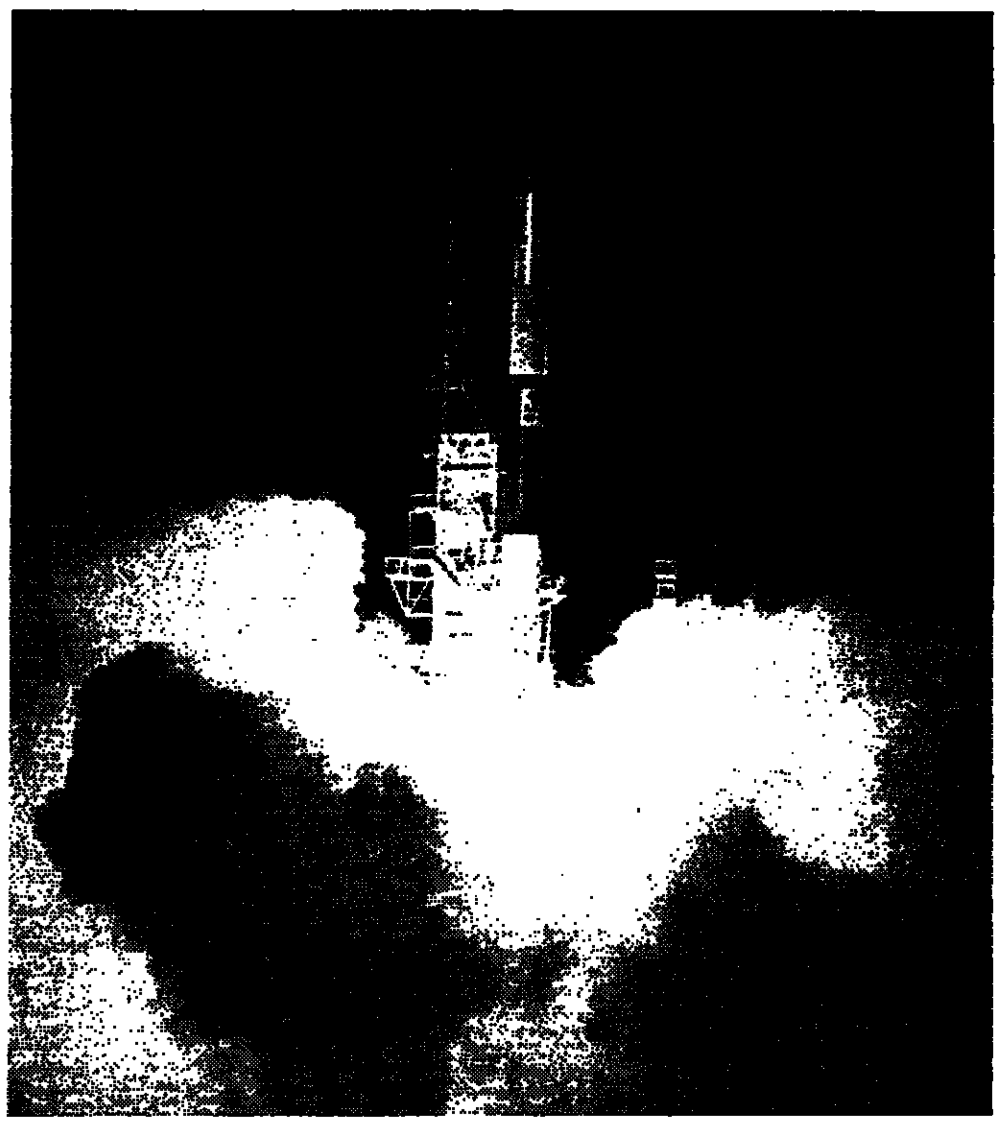
■ In spite of recent increases, spending on basic research is low in comparison with other countries, especially as much of it is carried out by companies, which tend to describe as "basic" much of which is "applied". Also, much money is wasted in the public sector.

Japan needs more basic research if it is to grow into a world power with more to its name than just economic success. It must also respond to US criticism that it is having a free ride on the back of Western technology. Finally, researchers are finding their traditional empirical approach to technological problems needs the support of deeper theoretical knowledge.

■ Japanese companies are too timid in their efforts to tap the brains of foreign researchers. They publicise their investments in R&D widely, in the hope of allaying economic frictions. But the expenditure has so far been minute – Y43.6bn in 1987, according to official figures, or less than 0.5 per cent of national R&D spending. Foreign acquisitions – such as Matsushita's planned $6.1bn takeover of MCA, the US entertainment group – will expand the size of Japanese companies' foreign presence but will not necessarily improve the flow of information about foreign know-how and foreign markets. That will require international management skills which they are only beginning to develop.

■ Most of all, Japanese must rid themselves of the myth they lack creativity. The root of this inferiority complex is awe at the centuries-long intellectual tradition of the West.

Warped by their sense of uniqueness, too few Japanese recognise that this tradition is now a common heritage.



As Japan's space programme reaches for the sky, so does its advance in science

IN THIS SURVEY

Average exchange rates for 1990: $ = Y147.38, £ = Y257.75

Editorial production: Roy Terry

AN AMERICAN visitor recently asked a senior director of Toyota Motor, about the educational level of his workforce. "It's not bad," he replied. "We've achieved about 80 per cent literacy."

His guest expressed great surprise, saying he had heard the literacy ratio in Japan was close to 100 per cent. The Toyota director answered: "I don't mean an ability to read. I mean the ability to programme a computer-controlled machine. About 80 per cent of our workers can do that. We hope to reach 100 per cent."

The well-spring of Japan's technological advance has been education. Japanese schools, universities and company training schemes produce a stream of skilled workers. The competitive advantage of a high level of education is likely to widen as automation increases the range of tasks any individual can perform. Also, the growing sophistication of technology is raising the level of knowledge needed to make further advances.

But Japan also faces challenges: can manufacturing industry attract enough young people amid growing skill shortages and increasing opportunities in other fields? And, can a country which has excelled in refining an existing body of knowledge now generate more creative thinkers capable of advancing the frontiers of technology and of basic science?

The 19th century founders of modern Japan put great emphasis on establishing schools capable of producing disciplined workers with a well-rounded knowledge of basic skills, especially maths and science.

The nationalistic rhetoric with which the pioneers imbued schools was largely eliminated after the Second World War. But otherwise the goals they set teachers survive intact.

About 95 per cent of Japanese youngsters stay at school until the age of 18. More than a third complete some form of higher education.

Companies build on this base, training workers for anything between one and five years. "Parents, schools and universities all contribute. We do the rest," says Mr Noritaka Karauchi, managing director of Sumitomo Electric Industries, the cable-maker.

The effort is worthwhile because workers are less likely to quit than in the West. Not only are well-trained individuals retained, but also the total knowledge of the workforce as

Ashley Ashwood

The wellspring of Japan's technological advance has been education. Entrance to the University of Tokyo *(above)* and *(below)* schoolchildren working in their classroom

EDUCATION AND TRAINING

Springboard of economic advancement

a whole is enhanced. Companies can dispense with rule-books; workers are entrusted with levels of responsibility which are rare in the west. At Toyota, any worker can stop the production line to correct a fault, whereas at western companies the right is generally limited to plant managers.

Because education was from the beginning harnessed to economic progress, Japanese schools rarely show signs of the elevation of arts above sciences which is so common in the UK.

Also, there is little of the intellectual snobbery which puts a higher value on abstract rather than practical knowledge. Unlike Europe and the US, Japanese universities had departments of engineering long before they had science departments.

Japan has just under 200 graduate engineers per 10,000 working people – about the same as West Germany and more than the US and the UK. More important, it is improving its relative position by producing 75,000 new graduate engineers each year – more than the the US, a country twice its size, according the Office of Technology Assessment of the US Congress.

As for researchers per 1,000 workers, the Japanese ministry of international trade and industry estimates Japan surpassed the US in the early 1980s and now has more than eight, against around seven for the US. The UK figure is about four and falling, due to cuts at universities.

Nevertheless, some industrial employers fear that even this flood of talent will be insufficient. A general labour shortage has been compounded by an increasing dislike of factory work among young people, who prefer comfortable office jobs.

Manufacturing companies are particularly worried about a loss of engineering graduates to other employers, chiefly financial companies. A slump in Japan's financial markets this year coupled to extra recruitment efforts on the part of engineering employers has staunched the flow.

The biggest concern is among small and medium-sized companies, which find it harder to attract labour than prestigious large corporations. These companies often borrow technologists – from big suppliers, for example, or from customers for co-development projects.

Nevertheless, the need for graduate recruits is so acute that many companies are demanding relaxation of rules on foreign workers in Japan - so far with little success. Groups are also transferring R&D activities overseas, though in quite small amounts.

Another solution is to make more use of the high skill levels among non-graduate Japanese workers by increasing automation. Investment in labour-saving equipment has been a key element in Japan's current surge in capital investment. Japan's total capital investment exceeded that of the US in 1988 – this year it will invest about 25 per cent more.

Since the advance of automation widens the range of tasks any one employee performs, the investments made in education will be worth even more to Japan in future than they already are.

There are bouts of concern that the *efficiency* with which Japanese schools prepare youngsters for industry limits achievements in other areas – *notably in creative thinking.* For example, scientists agonise over the fact that Japan has won *only five Nobel science* prizes.

Prompted by Mr Yasuhiro Nakasone, prime minister in the mid-1980s, the Ministry of Education adopted a reform programme to promote more creative work at schools – including a reduction in class sizes from the current high school average of 45.

Industry is keen to increase the supply of researchers capable of doing basic research, an area of increasing importance as other articles show. Japanese schools teach youngsters to work in groups. Researchers often need to operate alone.

But concern about basic research should not obscure the fact that most Japanese employers are well satisfied with the country's schools. As Mr Minoru Oda, president of the government-funded Institute of Chemical and Physical Research, says: "We should not start turning over the whole system in a futile quest for promoting genius. Genius will flourish anyway."

Stefan Wagstyl

Scientists respond to world pressure

Going back to basics

FOR 10 years, Japan has been trying to boost its commitment to basic scientific research. While the results are beginning to show in specific fields, Japanese scientists say it could be another 10 years before they can match the breadth of achievement of the US or leading European countries.

Some Japanese and some foreigners believe that while Japanese are excellent at refining established ideas, they have so far lacked the creativity for thinking up new ones. Some argue that the group ethic suppresses the individual talents. Others suggest Japan's Buddhist and Confucian traditions do not encourage logical thinking as Western philosophy does.

The truth is almost certainly more mundane. Japanese science was until recently starved of funds. Even today, although Japan spends a higher proportion of its GNP on research and development than does the US – 2.9 per cent against 2.5 per cent – the share of basic scientific research is far smaller.

Spending on basic research doubled in the decade to top Y12,000bn *in the year to March* 1989. However, total research and development spending rose even faster so the proportion spent on basic research fell to 13 per cent. Japan claims that although this share is much less than West Germany's about 20 per cent, it is roughly the same as the US.

However, foreign critics charge that the Japanese figure is inflated by including certain salaries in statistics. They also question how much of Japan's basic research is truly basic, given that 40 per cent of it is carried out by industry.

Nevertheless Japanese scientists are beginning to hold their heads higher at international conferences. "Science is a high risk business with little return. Twenty years ago we could not afford it. Now we can. We are getting there," says Mr Genya Chiba, vice president of the Research and Development Corporation of Japan, an affiliate of the government's Science and Technology Agency.

The drive to boost basic research comes from three sources. One is a belief that, to take its place among leading industrialised nations, Japan must be more than just an economic power. Japan needs to achieve more in other fields – including science. Officials are embarrassed that only five Japanese have won Nobel science awards, against 155 Americans.

This sense is compounded by pressure from the US for Japan to contribute more to the world's research effort in return for the benefits Japan has derived from research carried out elsewhere in the past.

Finally, Japanese companies increasingly believe they must do more basic research to pave the way for further advances in product development.

Japan already produces increasing amounts of world-class scientific research. Favourite for Japan's next Nobel award winner is Dr Akira Tonomura of Hitachi's Advanced Research Laboratories, who has developed a technique for using electron beams

Japanese science was until recently starved of funds

to make holograms of magnetic fields.

Meanwhile, the STA has started building a Y110bn synchrotron, a 1.5km-long machine which will be the biggest in the world when it is finished in 1998. The agency also funds an X-ray astronomy research centre at Nobeyama, south of Tokyo, which feeds off data from Ginga, the world's first X-ray astronomy satellite launched in 1987.

Foreign scientists are increasingly willing to cooperate with Japan. For example, in sub-atomic physics, the Institute for Physical and Chemical Research, Japan's oldest research institute founded in 1917, is starting a joint project with the Rutherford Appleton Laboratories near Oxford: the two sides will produce a machine capable of producing streams of muons, sub-atomic particles which can fuse the nucleus of an atom.

Japanese companies have built some 200 basic research laboratories in the last 10 years, although often their work is more applied than basic but still requires advanced scientific skills. For example, the increasing miniaturisation of circuits on microchips means the holes in the masking screens through which they are etched by a beam of light have to be made smaller. As they shrink, the light no longer follows normal scientific laws but the sub-microscopic laws of quantum physics. Light shone through a square hole no longer produces a square-shaped image.

As well as trying to boost budgets, Japanese scientists fret over the way money is spent, particularly in the under-funded public sector. Government money is split several ways: the Ministry of Education gets 45 per cent, the Science and Technology Agency 25 per cent, the Ministry for International Trade and Industry 10 per cent and other ministries the rest.

In spite of its large share of funds, the education ministry cannot take a lead in directing research because its funds are spread too thinly between 400-plus universities. To make matters worse, within universities professors rule their departments like fiefdoms, unwilling to see funds diverted *to new schemes.* Young researchers often wait years to start their own projects.

The result, with important exceptions, is atrophy – roundly condemned by, among others, Dr Susumu Tonegawa, winner of the 1987 Nobel prize for medicine for work done in the US. He said he could never have won his award if he had stayed in Japan.

Prestigious national institutes try to pick high-flyers to give them more freedom to follow their own hunches. So do institutes set up within universities to skirt traditional pecking orders – including the Institute for Advanced Technology established in 1988 at Tokyo University.

The most ambitious scheme is the STA's programme for Exploratory Research for Advanced Technologies (ERATO), which has sponsored 16 projects since 1981. ERATO cuts across tradition in singling out individuals, publishing the photographs of project leaders. Mr Chiba says: "Japan doesn't like heroes. But we must persuade people to treat scientists like artists."

Stefan Wagstyl

LOW-COST CAPITAL

More than just cheap finance

TO celebrate its fiftieth anniversary, Fujitsu, Japan's leading computer maker, built a palace of steel and glass: not a new headquarters, but a 20-storey, Y20bn engineering centre.

From the top floor of the building, completed two years ago in Kawasaki, near Tokyo, Mr Masaka Ogi, president of Fujitsu Laboratories, the company's research subsidiary, surveys a vast research and development site.

"We are spending 13 per cent of total revenues on research and development", he says. "That's very high. From the standpoint of current profits we should decrease this percentage but we are thinking of the future."

The sense that the company will provide whatever is necessary for R&D is pervasive among large Japanese groups. R&D is a core activity for large Japanese companies, bound into the process of management, manufacturing and marketing. The question is whether the financial conditions under which they operate encourage Japanese companies to be more positive about R&D than their western rivals. Put bluntly, can they raise capital more cheaply than their western competitors?

Broadly speaking, the answer in the past has been 'yes'. After the war, Japan built a tightly-regulated financial system designed to channel low-cost funds to industry. However, the advantage has probably shrunk in recent years due to financial deregulation. It may even have been eliminated – at least temporarily – by this year's crash in the Tokyo stock market.

However, other factors are at least as important in encouraging the expansion of R&D spending – a high-growth economy, corporate structures which spread risk, the existence of keiretsu, or industrial groupings, and the role of main banks.

Capital costs are a controversial issue, not least because some US businessmen claim the cheap capital has given Japanese groups an unfair competitive advantage. Often the evidence they cite is the fact that nominal interest rates have been lower in Japan than in the US.

The truth is more complex. First, nominal rates have to be adjusted for inflation to calculate the real interest rate differential between the two countries. Moreover, companies raise capital in two forms – debt and equity – the relative cost of which varies over time. Finally, the cost of capital is influenced by tax and accounting rules.

Two US academics, Robert McCauley and Steven Zimmer, concluded in a study last year by the Federal Reserve Bank of New York that, in general, Japan had much lower capital costs than the US or UK, and somewhat lower costs than West Germany. In the 11 years to 1988, the difference between the US and Japan for machinery with a life of 20 years was 3.4 percentage points, for a factory with a 40-year life, 4.9 percentage points and for an R&D project with a 10-year pay-off, a considerable 8 percentage points.

R&D is a core activity for large Japanese companies

These findings were borne out by Douglas Bernheim and John Shoven in a paper published last year at Stanford University. They concluded that while the Japanese advantage in debt finance narrowed from 9.3 percentage points in 1980 to 6.7 percentage points in 1988, advantage in equity financing widened modestly from 6.2 to 7.5 percentage points.

However, a third widely-quoted study (by Albert Ando and Alan Auerbach) found that Japanese companies had little advantage in the years 1966-81.

If Japanese companies have enjoyed the benefits of cheap finance, what of the future? The continuing deregulation of Tokyo's financial markets should mean a further decline in Japan's advantage in the cost of debt capital. Real interest rates in Japan are currently higher than in the US, as the US authorities ease monetary policy to fend off recession while the Japanese keep credit tight to fight inflation.

This year's decline in the Tokyo stock market could also mark an adjustment in equity costs. Mr Kumiharu Shigehara, head of the Institute for Monetary and Economic Studies at the Bank of Japan, says bluntly: "Most of the alleged cost advantage has disappeared now."

However, that is not the end of the story. Japanese companies will enjoy the fruits of past investments for years to come. Also, not all investments are equal. The Bernheim-Shoven study also found that the relative cost of funding a high-risk investment compared to a low-risk one was greater in the US than in Japan. This would make Japanese companies more likely than their US counterparts to invest in high-risk ventures - including long-range R&D.

The most important reason why Japanese companies may be more willing to entertain risk than US groups is their experience of high-speed growth: investments are much more likely to succeed in such an environment. Other conditions also encourage companies to undertake risky projects. One is the readiness of banks to act as main banks to a company, taking on a greater share of debt than a western bank might and often providing advice and sometimes even personnel.

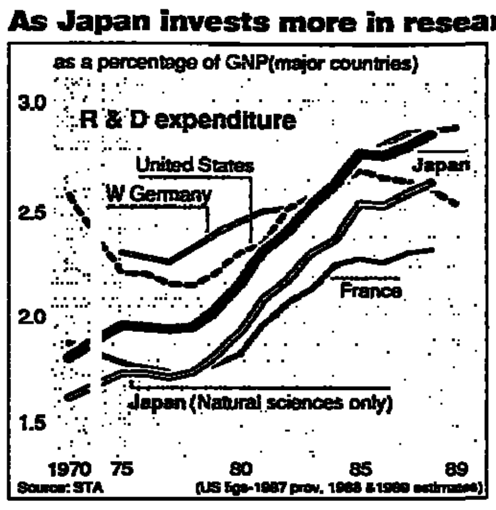
Similarly, companies inside the same keiretsu often collaborate on new projects. Even outside keiretsu, co-operation is common – between large companies and their suppliers and customers, for example. government too plays a role – encouraging companies to invest in R&D by providing pump-priming funds to collaborative schemes.

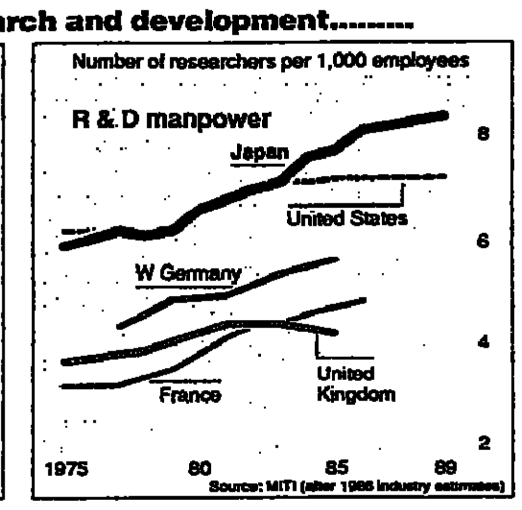
It seems unlikely these elements will disappear from Japan. So even if the average cost of capital is now similar to US levels, Japanese companies will still find it easier to earmark funds for R&D. As the Office of Technology Assessment of the US Congress concluded in a report this year: "In sum a network of policies, practices and relationships acts to support heavy investment in long-term performance in Japanese industry by spreading risk."

Stefan Wagstyl

THE TECHNOLOGY RACE

As Japan invests more in research and development.........





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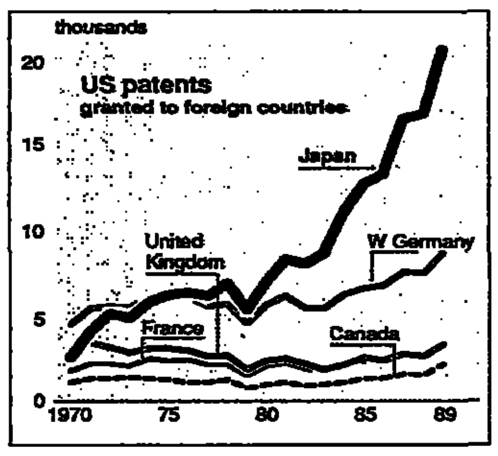
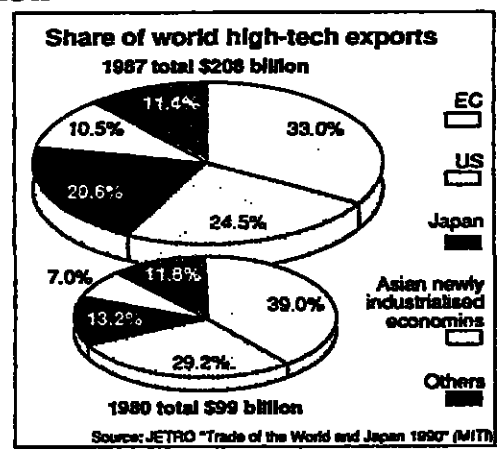




Stefan Wagstyl on Japanese contenders for honours

The hunt for Nobel prizes

THE first Japanese to win a Nobel prize was Hideki Yukawa, who won the 1949 physics award for work on sub-atomic particles. Shinichiro Tomonaga won the physics prize in 1965.

The doyen of Japanese scientists today is 72-year-old Dr Kenichi Fukui, professor emeritus of Kyoto University who won the 1981 Chemistry prize.

Two more Nobel laureates live and work in the US – Dr Leona Esaki (1973 chemistry) and Dr Susumu Tonegawa (1987 medicine).

Other distinguished Japanese scientists (who have so far failed to win the highest honour) include Dr Minoru Oda, an astronomer and president of the Physical and Chemical Research Institute, and Dr Junichi Nishizawa, director of the Semiconductor Research Institute and president of Tohoku University, one of Japan's leading seats of scientific learning.

Which young Japanese scientists are most likely to join the ranks of the world-renowned? A straw poll by the FT produced six candidates:

Dr Akira Tonomura, the 48-year-old chief researcher at Hitachi's Advanced Research Laboratory, who was short-listed for this year's Nobel physics prize. He found a way of demonstrating the Aharanov-Bohm effect, a little-known phenomenon of quantum physics, by using electron beams to draw holograms of magnetic fields. Scientists believe the work could be of more than academic interest since detailed knowledge of magnetism is vital to the development of supercondutors.

Dr Hiroyuki Sakaki, 46, a specialist in the physics of semiconductor devices and a professor at the Research Centre for Advanced Science and Technology at Tokyo University. His research concentrates on what happens in microchips when they are miniaturised to the point at which the laws of quantum physics take over from those of everyday physics. He won the IBM Science last year.

Dr Hiroshi Masuhara, 46, professor of the Kyoto Institute of Technology, who heads a government-funded project investigating the use of lasers in causing and controlling chemical reactions on a microscoping scale.

Dr Kosuke Morikawa, 47, a department director at the Protein Engineering Research Institute in Osaka, who is investigating the structure of DNA and RNA, the molecules which contain the chemical codes through which living cells reproduce. Dr Morikawa has devised techniques using X-ray crystallography which enable him to draw the shapes of these molecules very precisely. Some scientists believe his work may help in the study of the Aids virus.

Dr Hiroyuki Fujita, 37, is an electronic engineer who makes some of the world's smallest machines. An associate professor at Tokyo University, he specialises in making tiny motors using electrostatic and superconducting magnets. They are small enough to be mounted on a silicon chip.

Dr Junji Inatani, 41, associate professor of the Nobeyama Radio Observatory, at the National Astronomical Observatory, specialises in radio astronomy and the developments in observational instruments, especially in millimetre wave low-noise receivers, and the use of superconducting devices.

JAPANESE INDUSTRY 4

In three articles, **Guy de Jonquières** investigates the management of innovation by Japanese companies at home and abroad

Shot-gun approach

IT HAS taken a succession of painful jolts to rid Japan's western competitors of the idea that its industries' inexorable rise was due simply to a combination of skilful imitation, a protected home market and low labour costs.

The west has taken longer still to begin to appreciate what really gives Japanese companies their competitive edge. And though it is now learning some of the lessons, even more time will be needed to apply them effectively.

Decisive in Japan's success is its distinctive attitude towards innovation. For most Japanese manufacturers which operate in internationally competitive markets, rapid innovation is not merely a potent commercial tool: it is a central and defining element of business strategy. For many Japanese companies, it is a matter of innovate or die.

Nothing illustrates the point more clearly than the role and management of research and development. In western companies, much R&D has traditionally taken the form of discrete projects, each with its own carefully calculated budget and objective. Much of the work has been done under the thumb of powerful central R&D departments, which often have only irregular contacts with product divisions.

But in Japan, R&D is typically anchored right in the corporate mainstream and conducted closer to the market, with only broad financial controls. The development of new products is normally supervised by the divisions which will make and sell them and involves all those responsible for design, engineering, manufacturing and marketing.

To a western eye, the system may appear inefficient because its occupies so many people. It works because it encourages highly efficient diffusion of information. Not only do face-to-face communications at every stage of product development forge close links between different corporate functions, regular rotation of staff ensures that all concerned understand each others' jobs.

In large Japanese companies, graduates commonly spend a spell on an assembly line before being placed, say, in marketing, and continue moving as their careers develop. Half the engineers at Fujitsu's central laboratories switch jobs every 10 years.

The process is helped by Japan's patent system – developed when the rapid dissemination of imported western technology was a national priority – which requires considerably fuller disclosure than in the west. Government agencies such as MITI also contribute by collecting on behalf of industry voluminous information about technical and market trends worldwide.

Though a few companies – such as Kao, the chemicals and consumer products group – have a long history of long-term basic research, the bias in most is still much more towards "D" than "R". Some larger consumer electronics companies have as many as 400 new product projects under way simultaneously, some with life-spans of six months.

Cynics in the west may sneer that this only shows that technological roots are shallow. However, that ignores an important difference in approach. While R&D in many large western companies has been concerned with advancing the frontiers of science, in Japan the emphasis has been on incremental progress, exploiting technology to its fullest potential at each step.

The commercial pay-off shows up in a variety of ways. Japanese companies' ability to run numerous projects simultaneously enables them to combine different technologies effectively. It also helps them to identify opportunities to diversify by applying proven technologies to new types of product, sometimes well outside their existing markets.

Furthermore, the risks are smaller. Keeping R&D projects modest in scale limits the consequences of failure. Though Japanese companies cost projects much less rigorously than their western competitors – if at all – they are normally ruthless about terminating those which incur delays.

But from where do Japanese companies get their ideas, and what compels them to keep on innovating? Industries such as power engineering, public telecommunications and cable-making, which have traditionally relied heavily on public procurement, have – like their western counterparts – traditionally followed the dictates of government customers.

But in mass markets, innovation has long been a much more hit-and-miss affair, often inspired more by trends in technology or by the need to keep up with competitors than by any clear understanding of what consumers actually want.

While western companies launch new products using a heavy rifle, relying on in-depth market research to identify its targets, Japanese companies typically fire away blindly with a shot-gun. They literally shower the market with products, leaving it to consumers to judge the winners and quickly abandoning failures.

Some western experts contend they can do this because theirproduct development costs are extremely low. But others believe Japanese companies' main advantage lies in their ability to manufacture efficiently in small volumes and their skill in utilising common technologies across a wide range of different products.

Often, the first products into the domestic market are unrefined. But as a recent study* of Japanese innovation methods points out: "They prefer to deliver something imperfect quickly rather than deliver perfection too late. After all, a new, improved model is following down the track fast."

The most powerful stimulus to this whirlwind innovation is the intense competition on the home market. Because advances in technology are disseminated so rapidly, successful new products swiftly invite imitators. Indeed, competitors sometimes even copy decidedly unpromising products just in case they turn out to be best-sellers.

Hence, the logic has become self-perpetuating. The faster companies innovate, the more they stimulate competition, prompting them to innovate still faster. How much longer this model can continue in its traditional form – and why Japanese companies are under pressure to break out of the cycle – is the subject of the following article.

* *Seikin-ka: How Japan brings R&D to the market. British Chamber of Commerce in Japan.*

Loneliness of the front-runner

OF ALL the factors powering Japan's economic ascendancy during the past three decades, none has been more important than its success in making quality products in large volumes with exceptional efficiency.

Even today, the full extent of Japan's achievement in re-inventing manufacturing is still sinking in among western competitors. In sectors from cars to semiconductors, the Japanese lead remains wide – and may even be growing wider.

Yet in a growing number of industries, Japanese companies are compelled to confront a difficult question: will manufacturing excellence alone be enough to ensure continued expansion and competitiveness into the next century?

Several converging developments, within and outside Japan, have conspired to highlight this issue. They include:

- Japanese industry's own success in turning previously expensive products, such as consumer electronics, into mass-market commodity items;
- The impact of a much stronger yen;
- Japan's emergence as the undisputed leader in technologies such as microelectronics and new materials;
- A steady shift in value-added away from basic hardware and into non-manufacturing activities such as software, systems design and service.

Japanese companies have responded by upgrading technological capacity and directing resources into more sophisticated, premium activities. But the faster they do so, the more problems they encounter.

Corporate research spending has risen sharply during the past decade, partly because it is perceived as vital to staying competitive, and partly because Japanese companies are the pace-setters in a growing number of technologies.

Japan's annual investment in basic research has doubled in the past decade, to Y12,000bn last year. Most of the increase has been accounted for by companies which have set up laboratories and were responsible for 42.6 per cent of last year's total spending. The shares of universities (48.3 per cent) and government (9.1 per cent) have been in steady decline.

However, the further Japan seeks to advance technological frontiers, the greater the risks and uncertainties. Gone are the days when industries could tread a well-charted path already pioneered in the west. They are now out in front and on their own.

Simultaneously, the move up-market is revealing its own challenges. The more sophisticated products become, the more difficult – and the more important – it becomes to identify precisely the market for them. Here, too, Japanese industry's own past practices and western experience offer a decreasingly reliable guide. Japanese executives like to describe the challenge as matching "seed" (technology) with "need" (demand).

Rising development costs increase the risks of gambling on product innovations. But the more affluent consumers at whom the innovations are increasingly aimed tend to be more discriminating, individualistic and fickle than mass markets for the standard products which were long the mainstay of manufacturing output.

Some companies still believe there are more mass markets to be discovered. Matsushita Electric, the country's biggest electronics manufacturer, thinks they will take the form of large-scale computerisation in the home, led by the advent of high-definition television (HDTV).

However, even Matsushita, respected for its marketing and distribution power, is having to work harder to woo customers. Like many other companies, it has set up "antenna shops" and "lifestyle centres" in city centres to give it more insight into consumer trends.

The challenge is not simply to meet existing demands, but to create new ones. "Companies are thinking about how to stir the sub-conscious demands of customers. They need more two-way communications between producer and consumer," says Professor Tadao Kyonari of Hosei University business school.

Mr Kevin Jones, of the Tokyo office of management consultants McKinsey, says in markets such as personal computers, Japanese companies are no longer simply trying to make products better and cheaper. They are seeking increasingly to compete on "function" – what the machines actually do, rather than how they do it.

In the longer-term, this process seems likely to lead to increased product differentiation, as manufacturers target individual niches. The successful ones will be rewarded by more secure competitive advantage. However, the harder they pursue that goal, the less surely can they count on the advantages of their home market in powering international expansion.

Until now, most Japanese industry's global product strategies have been driven largely by the domestic market: the products which have done well internationally were winners at home. But many companies are already finding the formula no longer works as well.

Honda, which initially planned a single "world" model of its Accord had to develop separate ranges for different demands in Japan and the US. NEC's personal computers, leaders at home, have done far less well overseas because they do not comply with the internationally dominant IBM standard.

In spite of its strengths in microchip, computing and telecommunications technologies, NEC failed to break into the US telephone switching market. The biggest obstacle has been meeting the Bell telephone companies' requirements for the sophisticated software needed to operate their networks.

It is not that NEC lacks software design skills. Like many Japanese companies, it is highly proficient at writing technically complex programs. The problem is that Japanese software is tailored for Japanese needs, which are often radically different from those in the west.

The challenge can only be overcome through a much more complete and detailed understanding of western business practices and demands. At present, this gap shows up most clearly in electronics products, where value added is shifting rapidly from hardware to software and services.

But it will progressively affect companies in a wide range of other industries. Many of them are already talking of the "culture barrier" as the next big hurdle to international expansion.

Global 'localisation' policy

FIRST, Japanese industries sent products overseas. Then they started exporting the factories which made them. Now, companies face having to transfer abroad an increasingly wide range of engineering and management functions and rely on local employees to perform them. This process, dubbed "global localisation" by Mr Akio Morita, chairman of Sony, marks a decisive phase in the trans-national development of Japanese companies.

If they carry it through effectively, they will extend their competitive reach and move closer to becoming "insiders" in foreign markets. But to do so, they will need to re-think basic business precepts which have contributed much to their international success.

At least five sets of pressures are combining to encourage Japanese companies to move their overseas presence upstream beyond marketing and production and into design, product development and research:

- The need to understand better the demands of foreign customers and offer them improved service and support;
- Skills shortages and high wage costs at home;
- A growing need for western software, whether in the form of entertainment material such as films and television programmes, or of advanced computer programming;
- The desire to tap into international scientific networks and policy-making;
- Pressure from foreign host governments to upgrade the quality of Japanese investment by doing more development work locally.

The most eye-catching consequence has been Japanese takeovers of western companies. To acquire the new programme material essential to the success of high-definition television and to broaden its business base, Sony last year purchased Columbia Pictures of the US for $2bn.

Similar motives have led to talks between Sony's arch-rival, Matsushita Electric, and MCA of the US. Meanwhile, Fujitsu recently acquired ICL, Britain's largest computer maker, which possesses a solid base inside the European Community and considerable experience in tailoring information systems to customer requirements.

However, outright takeovers also have drawbacks – they tend to arouse political controversy. Furthermore, the number of attractive targets in the US and Europe is limited.

Hence, many Japanese companies prefer alliances and joint ventures. By far the most ambitious move has been the discussions initiated earlier this year by Daimler-Benz on possible link-ups in vehicles, aerospace and electronics with Mitsubishi.

Many such alliances involve an exchange of technology and production know-how for western marketing assistance. Instances of the reverse – such as Texas Instruments' joint microchip venture with Kobe Steel – are much rarer.

Another option is to establish wholly-owned research, development and design centres overseas. Companies, including Honda and Toyota in cars, Matsushita, NEC, Sony and Sharp in electronics and Kao in detergents, have all set up facilities in the US and Europe and are staffing them mainly with employees recruited locally.

The main role of these overseas facilities has been to adapt existing products to local requirements and to feed back technical and market information to headquarters. None yet possesses the resources or authority to develop products on its own.

That, however, is the direction in which events are moving. "Design work is shifting from Japan to the markets where products are sold," says Mr Ichiro Fujimoto, head of R&D at Sharp. "Until now, our approach has been to do basic design in Japan and modify it abroad. In future, more development will be done in Europe and the US."

"It is no longer possible to sit here in Tokyo and understand what foreign customers want," says Mr Toshiro Kunihiro, a senior executive vice-president of NEC. As well as setting up a research centre in New Jersey, the company is replacing Japanese managers and engineers in the US with American nationals.

Morita: Sony chairman

Honda and Sony, which have led the internationalisation of Japan's car and electronics industries, have even more ambitious plans. They aim to turn their US and European operations into semi-autonomous businesses, with all the resources needed to develop and manufacture products.

However, the companies admit this remains a long-term goal. Honda says it needed 10 years to transfer its technology and production methods to its plant in Marysville, Ohio, and its plan to create an independent US development centre will take even longer.

Honda and Sony are atypical Japanese companies, which have always looked to international markets for most of their sales growth. For other, more traditionally-minded groups, trans-national re-structuring and organisation will require an even more fundamental transformation.

At the very least, decentralising development will mean a short-term loss of efficiency, since it will be impossible to maintain the close communications which bind corporate functions closely together in Japanese companies. Powerful interests in the parent company will also have to be persuaded to share authority with colleagues overseas.

That will be made even more difficult by the cultural divide which separates Japanese from other nationalities. As a recent study of the world motor industry* observed : "The Japanese will need to address issues of ethnic background and gender in providing citizenship for foreign employees, issues that they have not confronted in Japan ... and where Japanese practice is far behind western norms."

Some experts say Japanese companies will need to evolve a multi-cultural model of organisation, well in advance of what most US multinationals have yet achieved. Optimists base their case on the argument that Japanese industry has repeatedly demonstrated a formidable capacity for turning obstacles into opportunities.

But whatever direction developments take, Japanese industry's global ambitions can no longer be satisfied by continuing simply to throw products on to their home market and waiting for consumers to choose the winners.

* *The Machine That Changed The World; Rawson Associates.*

Ian Rodger explores co-operation and competition in R&D

Five chip-mates become competitors

THE image the world has of Japanese research and development policy and practices was formed in the mid-1980s when it became widely known that a few Japanese companies had overtaken US competitors in semiconductor memory technology and production.

Those looking for an explanation of this shocking development quickly focused on a project sponsored by the Ministry of International Trade and Industry (MITI) in the late 1970s that was aimed at bringing Japanese chip-manufacturing technology up to international standards.

The so-called VLSI (very large scale integration) project got its start when MITI decided – rightly, as it turned out – that microchips were the vital raw material of industries of the future. The Japanese used to say that steel was the rice of industry; now steel was to be replaced by chips.

The VLSI project has caused a great deal of resentment abroad

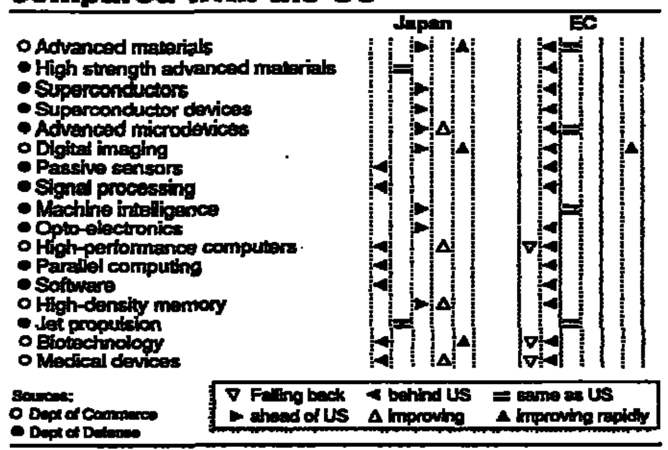
MITI selected five leading electrical companies, Toshiba, NEC, Fujitsu, Mitsubishi Electric and Hitachi, and invited them to participate in a big joint government-private-sector effort to develop chip-manufacturing technology. In return for their co-operation, MITI promised to put hundreds of researchers from its own Agency of Industrial Science and Technology (AIST) on the project and provide generous financing roughly equivalent to $300m.

The VLSI project has caused a great deal of resentment abroad basically because of the emphasis analysts have put on the collaborative elements in it. The notion of five big companies going along with a government-led proposal for technology development was alien to western practice. The idea of all their researchers working together and sharing the results of their findings was probably even illegal in the US.

Thus, the view spread that what the Japanese had done was unfair. They had conspired on what was not so much an effort to advance technology as to develop a world-beating industry. MITI had used its peculiarly strong "guidance" powers to force companies into line. In return, it was suggested, the companies participating in the project knew that once they reached the commercial level they could count on MITI to overlook their use of unfair and illegal trading practices, such as dumping, to gain advantage over foreign competitors.

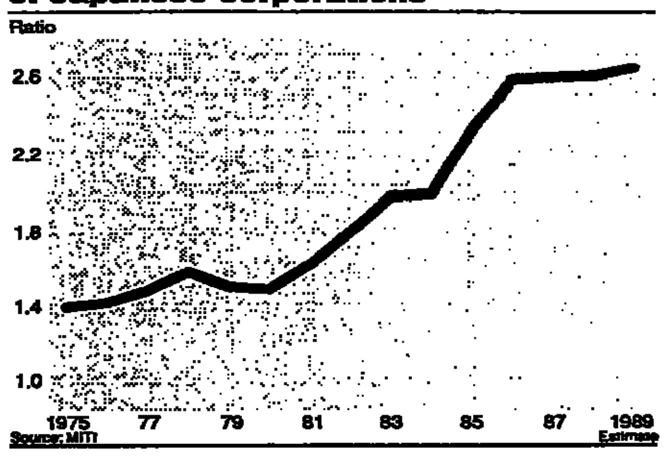
Those elements of the VLSI project – and many others sponsored by MITI over the years – are undoubtedly important ones, but they do not tell the whole story. For one thing, while they were common when Japanese business and government leaders still saw themselves as trying to catch up with the west in terms of industrial competitiveness, they are much less so in an era when, in many areas, they are at the state of the art.

Japan and EC technological strengths compared with the US



Sources:
○ Dept of Commerce
● Dept of Defense

R & D expenditure to sales ratio of Japanese corporations



Source: MITI

Today, many companies are sufficiently confident to no longer require government leadership. "If you can do something yourself, it is better not to do it with government; there are too many restrictions on government projects," Mr Hajime Mitarai, senior managing director of Canon, says.

Also, the government is sensitive to trade-related problems and now tends to avoid projects that would have an impact on industrial competitiveness. "Ten or 15 years ago, MITI invested fairly big money in national schemes. Now there is much less, and each company has to emphasise its own R&D," Mr Masaka Ogi, president of Fujitsu Laboratories, says.

Those projects which the government does sponsor these days tend to be open to international participation. In the next few weeks, MITI is expected to announce a Y25bn, 10-year programme to develop micro robotics technology, and researchers from all over the world will be invited to participate. "The door is open," Mr Kenzo Inagaki, deputy director of MITI's industrial machinery division, says. The other problem with the conspiratorial view of Japanese R&D is that it overlooks the very large role played by competition. Indeed, on examination, Japanese R&D practice ends up looking remarkably similar to western practice.

According to a survey conducted by the Japan Techno-Economics Society of R&D managers in 1988, competition is by far the most important factor contributing to the improvement of their R&D. Some 70 per cent cited this as a factor, whereas support from government was cited by only 5 per cent as a positive factor.

On the contrary, 15 per cent cited the insufficient level of government support as a negative factor. According to MITI, only 3 per cent of industrial R&D in Japan is funded by government, compared with 35 per cent in the US and over 20 per cent in the UK.

Mr Hideki Okamoto, director of AIST's technology research and information division, says he finds companies are willing to collaborate only on the technology of factors that are not crucial to the competitiveness of the ultimate product.

In the VLSI project, for example, everyone co-operated on developing certain production equipment, such as clean room systems and steppers, but MITI thought it wise to split the researchers into two groups, pitting Toshiba and NEC researchers against those of Hitachi, Fujitsu and Mitsubishi, to develop actual chips. The result was faster development than might otherwise have been achieved, MITI officials believe.

The other main motivation for participating in government programmes is a competitive one. It is a way of keeping an eye on competitors. Mr Kenjiro Kimura, managing director of technology and planning at Kyocera, the fine ceramics group, says the company values being involved in MITI R&D programmes because it stimulates its researchers to keep in the forefront of their technology – in Kyocera's case, solar cells.

"You have to have a high level of technology to get into these programmes. Then, rubbing shoulders with the best helps get your own level up. It is more important than the money available," Mr Kimura says.

Peer pressure is also important. "Sharing of information on R&D is a bit delicate, but there is an informal information network. They all come out of the same universities," says Mr Masahiro Kawasaki, director-general of the Institute for Science and Technology Policy in the government's Science and Technology Agency.

Participation is a way of keeping an eye on competitors

That peer pressure is one reason why, as Mr Michael Porter, the US management scientist, has observed, the critical competitors are the local ones. As AIST's Mr Okamoto puts it, "If an R&D manager asks for a budget on the grounds that Dupont is working in the area, he will be refused. If he says another Japanese company is doing it, he will get the budget."

JOINT RESEARCH

Competition versus collaboration

IN JAPAN, protruding nails are quickly hammered down, says the head of research at one of the country's large electronics companies. The Japanese dislike of non-conformists, he says, tends to hamper creativity and innovation.

Some managers think a change in the Japanese education system is needed to encourage young people to think for themselves. Many Japanese companies are also trying to find their new ideas in the freer-thinking West.

Japanese electronics companies say they would like to become involved in publicly-funded European research projects. The difficulty is that western companies are determined to keep them out. The Joint European Submicron Silicon (Jessi) initiative, Europe's largest chip research programme, does not have any Japanese members. It has had talks about collaboration with Sematech, its American counterpart, but neither group hides the fact that Japan is its principal enemy.

Some think a change in the education system is needed

Mr Tomihiro Matsumura, executive vice-president of NEC, believes his company has every right to participate in Jessi. NEC makes semiconductors in Scotland and Mr Matsumura argues that this makes the company a European insider.

Mr Raimondo Paletto, Jessi's president, said earlier this year that Japanese and US-owned companies which showed sufficient commitment to Europe might be allowed to participate in the project. But few European chip executives would be prepared to see the Japanese in Jessi – and few company officials in Japan think they will be permitted to take part.

One company which firmly believes it should be allowed to participate in Jessi is Fujitsu, not necessarily in its own name but through its newly-acquired subsidiary ICL, the largest computer manufacturer in the UK. ICL participates in the major European research programmes. Some European company officials, however, think that it should be excluded now that it is under Japanese ownership.

Mr Masaka Ogi, president of Fujitsu Laboratories, the group's research organisation, said ICL's European status was one of the reasons it bought the company from STC, the UK telecommunications manufacturer. Many of the benefits of the purchase would disappear if ICL did not have access to European research projects, he says. "I think if ICL is separated from the European networks, half the meaning would be lost," he says.

European executives argue that there is one insuperable barrier to Japanese companies participating in publicly-funded projects in Europe: European companies, they say, are not allowed to take part in similar projects in Japan. Mr Ogi counters that if ICL is permitted to retain its membership of European programmes, Fujitsu will argue for greater European access to Japanese projects.

Japanese government officials contend that European companies which want to participate in research programmes in Japan will find they are pushing at an open door.

An official at the Ministry of International Trade and Industry (Miti) contends that while foreign companies were once excluded from Japanese projects, this is no longer the case. "It is correct that in Japan our national projects were closed. But, today we have international projects in which European companies participate," he says. He points to a supersonic jet engine project and a water treatment research programme which are open to non-Japanese companies. "But I don't know of a case where a Japanese company is participating in a European project," he says.

Fujitsu is not the only Japanese group which has purchased a stake in a European company with the aim, at least in part, of gaining access to high quality research. Matsushita, Japan's largest consumer electronics company, made its first foreign acquisition earlier this year with the purchase of a minority stake in Loewe Opta, one of Germany's largest consumer electronics companies. Matsushita said that it hoped to work with Loewe Opta in areas like high definition television.

Some Japanese companies have struck up alliances with western companies short of acquisition. Earlier this year, NEC and AT&T of the US announced an agreement to swap semiconductor technology. The companies agreed, among other things, to exchange computer-aided design tools for use in the design of application-specific integrated circuits (Asics), chips which are tailored to customer requirements.

Sharp is to set up a centre in the UK to do basic research

A further strategy used to tap western expertise is to set up their own research laboratories abroad. Sharp Corporation recently announced it was setting up a research centre in the UK. Although the company has two research centres in the US, it says the British centre, in Oxford, will be its first outside Japan to do basic research, as opposed to research on manufacturing or products. The Oxford centre, which will eventually employ about 100 people, will conduct research into artificial intelligence and opto-electronics.

Research abroad is still insignificant, however, compared to the scale of the Japanese electronics companies' efforts at home. Hitachi has set up research centres in the UK, Ireland and the US. The UK laboratory, in Cambridge, employs five researchers, the Irish centre, in Dublin, employs 12, and the US facility, in San Francisco, employs 10. By contrast, Hitachi's Central Research Laboratory, in a suburb of Tokyo, employs 1,000 researchers. Its nine Japanese laboratories employ nearly 4,000 scientists.

Michael Skapinker

On the next five pages, FT writers look at the technology behind various sectors of industry in Japan

SEMICONDUCTORS

West's nightmare scenario

HISASHI Horikoshi, head of Hitatchi's central research laboratory, finds it hard to think of an area in which Japanese semiconductor companies' technology is ahead of their western counterparts.

Hitachi was the first company to announce it had developed a prototype for the 64-megabit dynamic random access memory (D-Ram). The announcement, made at a conference in Geneva last June, was greeted with some scepticism.

Mr Horikoshi readily admits that Hitachi's advantage over competitors such as IBM of the US and Siemens of Germany all depends on what one means by a prototype.

In other respects, he concedes, western companies have the technological edge. And yet the past decade has seen western companies steadily losing semiconductor market share to the likes of Hitachi. Through their domination of the international D-Ram market, Japanese chip makers have grabbed the top three places in the world top 10. Of the 10 leading semiconductors worldwide last year, six were Japanese.

American companies have continued to dominate the manufacture of microprocessors, which are computers' central control mechanisms.

The nightmare for large western manufacturers of the US is that the Japanese companies might begin to move in on the microprocessor market in the same way as they did on the D-Ram sector.

Among Japanese chip makers and government officials there is general agreement that companies need to build on their success in D-Rams and begin to extend their activities into areas like microprocessors.

Semiconductor makers and analysts in Japan ask themselves two questions about such a strategy. Can we do it? And if so, should we? Japanese success in the D-Ram market has led US and European companies to complain of unfair trade practices and has resulted in anti-dumping action on both sides of the Atlantic. Some fear similar complaints if the Japanese extend their success to microprocessors.

Mr Tomihiro Matsumura, executive vice-president of NEC, the world's largest semiconductor company, points out that dominance of the D-Ram market has its discomforting side. D-Rams are commodity chips and Korean and western companies could pose a threat. D-Ram prices are also volatile. "Memories are not stable. It's not easy to make a steady profit," he says.

Japanese chip makers have grabbed the top three places in the world top 10

An official at the Ministry of International Trade and Industry (Miti) says that a move from commodity to more complex chips would be a natural one for Japanese companies to make. "The world market is moving in a more customer-orientated direction," the official says.

Most Japanese semiconductor companies say, however, that catching up with western counterparts will not be easy.

Executives like Mr Masaka Ogi, president of Fujitsu's research organisation, says: "In Japan, there are, of course, some attempts to create new microprocessor activities. But it's an area in which the US is very much more advanced than Japan."

Mr Tamotsu Harada, spokesman for the Electronic Industries Association of Japan, says that one of the reasons why Japanese companies have had less success in developing more highly specified chips is that they do not have a strong defence industry as a customer.

Mr Horikoshi of Hitachi provides a second explanation: Japanese computer users are less advanced than their European and US counterparts and place less exacting demands on chip makers. "We tend to be late in introducing new types of computer applications here," he says. "It will take us 10 to 20 years to catch up with users in the US and Europe. Japanese people have more television sets, but they have fewer work stations. It makes it very difficult for us to come first when it comes to designing computer applications." The Japanese are far more adventurous in their acceptance of new consumer electronic devices, but these require less sophisticated chips than computer systems, he says.

Some Japanese companies have, however, already managed to extend their activities into the field of microprocessors. NEC derives only 30 per cent of its semiconductor sales from memories. Microprocessors account for 25 per cent, application specific integrated circuits (Asics), or customised chips, for 15 per cent and other semiconductors for the remainder.

Mr Matsumura says that the key to improving a company's capability in more highly specified chips is the ability to recruit semiconductor designers. NEC has taken on 200 new designers annually in each of the past five years. The group now employs 2,500 chip designers.

Finding these designers is not easy, Mr Matsumura concedes. By opening research centres in provincial Japanese cities, NEC has been able to recruit design engineers in parts of the country where labour shortages are less acute. Mr Matsumura adds that NEC has built up its microprocessor and Asic activities largely by supplying other parts of the group. About 65 per cent of the Asics manufactured by the company are produced for customers in other NEC subsidiaries.

Mr Roger Mathus, executive director of the Japanese office of the Semiconductor Industry Association of the US, has little doubt that Japanese manufacturers could extend their microprocessor expertise if they wanted to. "The capability is there. They have very fine engineers," he says.

Mr Kaz Hayashi of the Japanese office of Dataquest, the high-technology consultancy, says, however, that Japanese companies should be wary of provoking fresh trade disputes by moving too aggressively into new chip markets. Miti, too, recognises that a move into microprocessors is a potential future point of trade friction.

Michael Skapinker

SOFTWARE

Discipline is the cure for Achilles' heel

COMPUTER software has been Japan's Achilles' heel in information technology. It will not be for much longer. Forget xenophobic claims that the Japanese are culturally incapable of writing high quality software. It is neither true, nor will it prove any impediment to Japanese plans to become world players in software and services.

Late last month, for example, the troubled Control Data Corporation of the US sold its Micrognosis trading room subsidiary to CSK, Japan's largest independent computing services company. CSK president, Mr Isao Okawa, setthe tone for Japanese ambitions in the sector when he observed: "Globalisation is essential if CSK is to achieve its goal of generating $10bn in revenues by the year 2001. CSK intends to expand internationally in fields such as financial services, manufacturing, facilities management, networking and database management. By acquiring Micrognosis, we are establishing an excellent foundation to do business beyond Japan."

Japan's software competitors should also be looking, fearfully, at the way it managed its breakthroughs into world markets in semiconductors and automobiles through manufacturing quality and attention to detail – qualities often sadly lacking in western software development. The chronic shortage of quality programmers in the west has meant that it has been too easy for too long to get away with low quality software. Horror stories of software delivered late and over budget are legion. Japanese competition may change all that.

Writing software, for all its superficial glamour and mysticism, is essentially a manufacturing process which lends itself to engineering discipline. In the west, however, discipline is frequently lacking or absent. There are a host of well established 'methodologies' or prescriptions for developing software efficiently. Many western software houses use them; some use all of them, simultaneously. The result is a kind of methodological Babel.

Horror stories of software delivered late and over budget are legion. Japanese competition may change all that

By comparison, the better Japanese houses subscribe to a single methodology used by all their software programmers and analysts. It may not be the most advanced technique but a single, company-wide discipline offers possibilities of quality control that are often missing in the west. Software markets, however, are different from hardware markets in several respects and it is these differences that Japanese companies will have to come to terms with if they are to compete globally in software. Toshiba may be the market leader in laptop computers, but which Japanese company could challenge US software leaders like Microsoft, Lotus or Oracle?

There are essentially three kinds of software. First, operating software which controls the internal workings of the computer itself. Operating software is generally written by hardware manufacturers who understand best how to tune their machines for optimum performance. It is not an area where manufacturers compete except where there machines are functionally similar. Fujitsu, which builds IBM-compatible mainframes, has developed its own operating system and, through an agreement signed last year, early access to new developments in IBM operating software.

Japan has also developed its own microcomputer operating system, Tron, which has been touted as a challenger to the most popular western systems, MS/DOS and Unix. It is unlikely to fill such a role, even in Japan, but it does serve as a illustration of the quality of Japanese software developments.

Second, there are utilities: software which simplifiesroutine operations such as sorting files or carrying out mathematical operations.

The pattern is for customers to rely heavily on manufacturers to develop tailor-made software

Third, there are applications; software which carries out the customer's business requirements. Here there is a massive difference between Japanese and Western practice. In the US, according to International Data Corporation, some 15.5 per cent of IT expenditure goes on packaged software, generalised software developed for a particular application but which pays no attention to the idiosyncracies of individual companies. In Japan, on the other hand, less than 7 per cent of IT expenditure goes on packages.

Japanese, in fact, spends almost one-third of its total IT budget on professional services, chiefly in the form of custom-written software. The comparable figure for the US is 16 per cent.

The pattern in Japan is for customers to rely heavily on manufacturers to develop tailor-made software for them, either using their own software specialists or software houses.

IDC's projections suggest that Japanese customers' enthusiasm for packaged software will grow modestly over the next five years. There is evidence it will be at the expense of US producers. Mr Bill Totten, an American whose company K.K. Ashisuto distributes US packages in Japan, points out that in 1988 only one per cent of revenues came from selling Japanese products. This year it will be more than 20 per cent. He complains that US companies are failing to consider the special needs and requirements of the Japanese market.

The Japanese, on the other hand, are well aware of the need to "think global and act local". The problem for them is two-fold; how best to understand the nuances of western business practice so they can build competitive packages, and how best to support customers abroad.

One way is through acquisition; another, through partnerships and agreements with local companies. The strength of the Japanese hardware business offers the possibility of sales involving both hardware and applications software.

Alan Cane

Alan Harper

Takuma Yamamoto, of Fujitsu, with Arthur Walsh, of STC

COMPUTERS

Strategic equity alliances

JAPAN'S computer industry, its confidence underpinned by a buoyant home market, is looking overseas with increasing self-assurance. It will, however, find the battle for supremacy in the world information technology (IT) market very different from semiconductor memory or consumer electronics.

Fujitsu's purchase of a majority stake in ICL, a subsidiary of STC of the UK shows clearly how Japanese hardware manufacturers are seeking to increase their influence abroad while gaining access to skills in short supply at home.

The deal, completed at the end of last month, also provides evidence of Japanese sensitivity to broader political concerns: in five years, Fujitsu will seek a listing for ICL on the London stock market. The aim is to underline ICL's credibility as a European company with the right to a full role in European research and development projects.

Fujitsu's link with ICL is an example of the way Japan's leading computer manufacturers are forging equity alliances with Western computing companies in addition to marketing and technology agreements. At one end of the spectrum, for example, Fujitsu has a majority stake in Amdahl, the leading US manufacturer of mainframes compatible with those of International Business Machines.

At the other, it has a significant stake in Poquet Computer, a new company marketing a pocket-sized computer with the power of a desk-top machine. Much of the design technology in the Poquet device owes its place to Fujitsu's involvement.

NEC has a 15 per cent share in Bull HN, the overseas operations company of Groupe Bull of France. Hitachi owns 80 per cent of Hitachi Data Systems, its principal overseas computer operation; the rest is held by Electronic Data Systems (EDS), a wholly-owned subsidiary of General Motors. Hitachi also markets its large computers in Europe through Comparex, a joint venture between Siemens and BASF.

Rumours that NEC would like to increase its stake in Bull and that Hitachi would be interested in taking a share of Olivetti, to whom it supplies large computers for sale in Italy, surface regularly and are just as regularly denied by all the parties concerned.

If the Japanese are to continue to make a mark on the world IT business they will have to do so with networks similar to those which characterise their operations inside Japan. The computer industry is changing rapidly, moving from an emphasis on proprietary hardware and custom built software to open or industry standard systems and packaged software.

Japan, while a world force in the supply of computing hardware from supercomputers to laptops, is not yet tuned to compete in this testing environment. It may be some comfort to Japanese makers that few Western companies are in better shape. Data General and Wang of the US and Groupe Bull and Nixdorf of Germany were caught out by the speed of change and have suffered accordingly.

IBM, the Japanese manufacturers' traditional enemy, is establishing the new model – a network of partners held together through a mixture of equity involvement, technology agreements and joint marketing plans.

Japan's principal achievement in computers has been to build in 30 years or so an industry capable of challenging IBM at home and abroad. No other country can make such a claim. The Ministry of International Trade and Industry (Miti) achieved this by encouraging a complex balance of collaboration and competition.

Now the Japanese market for IT equipment is second only to that of the US. Figures from the International Data Corporation suggest that in 1989, it amounted to $50bn or 18.4 per cent of the world total, compared to $102bn (37.6 per cent) for the US.

By 1994, IDC says, the US share of the world market will have fallen to 34.6 per cent ($163.5bn) while Japan's, at $100bn, will have risen to 21.1.

There is a distinct difference in the structure of the two markets however. IDC notes that Japan spends 15 per cent of its IT expenditures on large-scale systems, compared to only nine per cent for the US; on the other hand the US expends 23.5 per cent of its IT dollars on personal computers and workstations, compared with 15 per cent in Japan.

Japan has only recently begun to move towards personal computer based IT systems. There are three principal reasons. Japanese business methods are not well suited culturally to electronic means of communication; Japanese character sets have only recently become available for personal computers; and Western-style computers have been unwieldy in small, cluttered Japanese offices. The advent of "clam-shell" computers which can be folded away in a drawer is overcoming this problem.

It is also likely to trigger a new revolution in western personal computing based on small, powerful and highly portable machines.

Now according to IDC's figures, the market for large machines in Japan will grow by 10.3 per cent between 1989 and 1994, while the market for personal computers and workstations will grow by 18.2 per cent.

Japan's leading manufacturers have schizophrenic tendencies, however, holding on to captive markets at home by marketing proprietary designs while selling industry standard systems abroad. They have great interest in, but little experience of, "open" standards such as Unix. Shares in ICL and Bull do more than open new marketing channels; they are the gateway to the skills needed to compete in the "open" world.

Alan Cane

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CHEMICALS

Still far behind US and European giants

CHEMICALS are one of the few manufacturing sectors in which Japan runs a trade deficit. Japan's output of chemicals exceeds that of any other country except the US, but the industry is highly fragmented – its largest companies, Mitsubishi Kasei and Asahi Chemical, are only one third the size of ICI, the UK chemical group.

Although leading Japanese chemical companies have ambitious "globalisation" plans for the 21st Century, there is little prospect within the next generation that they will become global players on the same scale as the European or US giants, in the way that Japanese electronics and car manufacturers are now world-wide leaders of their industries.

There are several reasons for the relatively modest performance of the Japanese chemicals industry:

- Its historical base lies in hundreds of small chemical companies started after the Second World War together with the fragments of the pre-war industrial combines. These have shown little inclination to merge and restructure.
- Many Japanese chemical companies started with licensed US and European technology, and the terms of the licences prevented them exporting their production.
- Successful innovation in the chemicals industry depends more on having a strong science base than in other manufacturing sectors including electronics. The level of scientific research and teaching in Japanese universities and other educational institutions has only recently come close to American or European levels.
- The Ministry of International Trade and Industry (MITI), which played an important role behind the scenes in helping other industries to organise their assault on world markets, has not taken such an active interest in chemicals.
- Chemicals have relatively low status in Japan, compared to the electronics and computer industries – and this makes it more difficult for chemical companies to recruit good staff. In an effort to change its reputation as a mature or sunset industry, the sector is promoting the idea of "a new age of chemistry" in which chemists are creating exciting new materials.

The greatest competitive advantage of the Japanese chemicals industry lies in the close relationship it has inevitably built with its local customers, especially the world-beating auto and electronics companies. The global expansion of Toyota, Nissan and Honda, Matsushita, Hitachi and Toshiba makes it possible for "camp followers" in supply industries such as chemicals to follow them overseas.

The European and US chemical giants have had the same idea and they are pouring resources into Japan, in an effort to hitch their fortunes to the global expansion of the country's automobile and electronics industries. Four years ago ICI's Japanese activities were limited to importing chemicals and participating in joint ventures with local companies. Today, after a £100m Japanese investment spree, ICI owns two new factories and two research centres.

Although no group operates globally, many have significant overseas operations

Japanese chemical companies do not yet devote as much of their resources to research and development as their western counterparts, but R&D spending rose steadily from 3 per cent of sales in 1982 to 4.5 per cent in 1987, the most recent year for which figures are available. According to the Japan Chemical Industry Association, the industry has three priorities for R&D: chemicals for the electronics industry, new materials (such as high-performance polymers and ceramics) and biotechnology.

Although no Japanese chemical group operates globally, many companies have significant overseas operations. Some have set up plants, some have joint ventures with western companies and some have acquired western companies (always in friendly takeovers).

One of the first Japanese enterprises of any sort to set up an overseas plant was Sekisui Chemical, an Osaka plastics company. "We started production in the US in 1963 but we failed and retreated after three years," said Mr Masanori Ogata, the company's public relations manager. "That was a good lesson for us. We learned to be more careful when we went back into overseas production in 1974."

Sekisui now runs six production plants outside Japan (including one in Wales) but even so the company's overseas sales are no more than 5 per cent of total turnover.

Kaneka, another medium-sized Osaka company, was also an early pioneer of overseas manufacturing. Its Belgian plant, set up in 1970, is now a leading European producer of MBS resins – chemicals used to strengthen plastic bottles. "Our dream is to establish our own research laboratory overseas," says Mr Tomoya Hanba, senior executive director. "But that is still a long way away."

Kaneka's sales in 1990 were Y246bn – less than half those of Courtaulds, a broadly similar UK speciality chemical company. Yet Kaneka's products, ranging from plastics and fibres to medical and pharmaceutical products, from margarine and yeast to solar cells, cover a far wider field.

The company finds it hard to resist interesting technical developments coming out of its laboratories, and it does not make the same effort to concentrate on "core businesses" as a western company would. This has given Kaneka a breadth and diversity that is a common feature of many Japanese chemical companies – and a potential weakness, as Mr Hanba admits. "We're a medium-sized company with a very wide range of products and we do not really have enough research and marketing staff for all of them."

Clive Cookson

Japanese prefer their own medicines

Prescription for success

Naito: looking abroad

Jon Kempner

Dr J. Lackie at Yamanouchi Research Institute, Oxford: probably the most internationally-minded Japanese drug company

Morioka: 30-year forecast

THE JAPANESE consume more medicines per head than any other nation. Their eagerness to buy drugs has given Japan a large, lucrative and, until recently, very introverted pharmaceutical industry.

Japanese pharmaceutical sales in 1989 were £19bn, compared to £27bn in the US – and only £2.7bn in the UK. Yet no Japanese drug company is a player in the global business in the same way as Glaxo, SmithKline Beecham, Wellcome or ICI of the UK. Japanese drugs have 45 per cent of their home market and only one per cent of the US and European market.

The large Japanese pharmaceutical companies did not start planning serious "globalisation" strategies until the early 1980s.

And time-scales in the industry are so long – a typical new drug takes 12 years to bring from the first stages of research to the market – that it will not be possible to tell whether globalisation has succeeded until well into the next century.

"I reckon that the Japanese pharmaceutical industry will need another 30 years to become truly global," says Mr Shigeo Morioka, president of Yamanouchi – probably the most internationally-minded Japanese drug company. "We are taking a long-term view."

Within the last five years Yamanouchi has built a manufacturing plant in Ireland and a UK research centre in Oxford, set up six representative offices outside Japan to coordinate clinical development, bought Shaklee (the US supplier of nutritional supplements) and is now negotiating to acquire some pharmaceutical operations from Gist-brocades, the Dutch chemical company.

But Yamanouchi's products are still sold outside Japan by foreign licensees. The next stage in the company's international expansion will be to establish a direct marketing organisation.

"We wish eagerly to establish our own sales force as quickly as possible but that will take some years, because of the characteristics of the pharmaceutical industry," says Mr Morioka.

Eisai is another outward looking pharmaceutical company. It is concentrating on establishing research centres outside Japan as a base for international expansion. Last year Eisai set up an institute in Boston for basic research in organic chemistry, and in September this year it announced a £50m investment over 15 years to establish and run a neurosciences research centre at University College, London – the largest and longest-term funding arrangement that any company has made with a UK university.

"If we do research only in Japan, the outcome will be very limited," says Mr Haruo Naito, president of Eisai – and grandson of Toyoji Naito who founded the company in 1941. "The main reason for setting up research facilities in Europe and the US is to make contact with the research circles there which have very different characteristics. Then, once we succeed in having good discoveries from these global research facilities, production and marketing are not so difficult."

As Mr Naito concedes, "the fusion between basic research done in universities and applied research in pharmaceutical companies has not been handled well in Japan so far."

Until very recently Japanese pharmaceutical researchers have concentrated on small-step innovations leading to "me-too" drugs. They have not made the breakthrough inventions that lead to blockbuster drugs.

Traditionally the Japanese pharmaceutical industry's strongest area has been in antibiotics. But its most innovative product so far is probably Fujisawa's FK-506, a powerful suppressor of the immune system which has had considerable publicity in the west recently as a treatment to prevent transplant patients rejecting their new organs.

Japan has a drug pricing system quite unlike any other country, under which the government cuts the price of all drugs on the market by 10 to 15 per cent every two years. "This puts a premium on innovation," says Dr Jim Armstrong, president of ICI Pharma in Japan. "The squeeze on profits is on the less innovative companies. You have to keep inventing."

The approvals process for new drugs in Japan seems designed to protect its national pharmaceutical companies as much as Japanese patients. Until recently the Ministry of Health and Welfare has made life difficult for foreign companies by insisting on extensive testing of any new drug in Japan.

As the Japanese companies expand overseas, the ministry is becoming more accommodating to western companies. It is increasingly willing to accept toxicity tests and preclinical data from other countries though it still insists on Japanese clinical data. (One sign of progress is that the contraceptive pill is likely to be approved in Japan next year – after three decades of use in the US and Europe.)

Dr Armstrong expects the Ministry of Health and Welfare to come further into line with European and American practice following an international conference of harmonisation of pharmaceutical regulations, planned for Brussels next year.

Clive Cookson

TELECOMMUNICATIONS EQUIPMENT

Hard sell for software

JAPANESE companies are becoming increasingly competitive across the range of telecommunications equipment. In addition to research and development on terminals and transmission equipment, from facsimile machines to large-scale digital switching units, Japanese companies intend to introduce new products to be integrated into global telecom networks of the future.

Japan's share of world exports for telecommunications equipment rose from 12 per cent in 1980 to 33 per cent in 1988, according to US industry estimates. It will almost certainly rise further as Japanese companies step up their efforts to sell high added-value products such as telephone exchanges (PBXs) at a time when markets for these goods are becoming more liberalised.

The big challenge is that while hardware produced for the home market can be adapted relatively easily to foreign specification, software cannot. Companies will have to find ways of developing software more effectively for foreign markets – either by establishing more development centres overseas or by buying know-how through acquisitions, as Fujitsu has done with ICL, the UK computer maker.

Leading Japanese telecom equipment makers, such as NEC, Fujitsu, Hitachi and Oki Electric Industry, are also the principal manufacturers of microchips and consumer electronics products. Moreover, they make computers and design telecom networks. The strategies of these large companies revolve around use of know-how gained from microelectronics and computers to design more attractive telecom equipment.

For example, NEC, which bills itself as the specialist in so-called C&C or "computers & communications", combines its microchip and data-processing capabilities to bring out improved telecom equipment. Other electronics companies that have not specialised in telecom equipment, including Matsushita Electric Industrial, are entering important sectors of the telecom market on the strength of their facsimile machines and cordless telephones.

Among the large concerns, Mitsubishi Electric and Toshiba lack strong foundations in telecom equipment. But they are channeling more resources into the sector while teaming with US and European companies. Such companies realise that more sophisticated telecom networks will provide the links for many types of products ranging from mobile telephones and laptop computers to point-of-sales (POS) systems and mainframe computers. They are already focusing on local-area networks and international computer networks for their own use for such purposes as connecting far flung research centres or designing microchips from points scattered across the globe. Five years from now, Japanese companies intend to be near the introduction of video-tape software distribution to homes via optical-fibre cables.

Japan's share of world exports for telecommunications equipment rose from 12 per cent in 1980 to 33 per cent in 1988

This will make use of the high-speed and broad-band network capabilities that some carriers hope to offer. These video-tape programmes, such as movies or video-magazines, will probably be in high-definition television (HDTV) formats, which without superior data-compression techniques will require transmission of much larger volumes of information.

And guess which companies will sell the HDTV sets? The same large Japanese companies that will make the 16-megabit and 64M dynamic random-access memory microchips, digital signal processors and other major components for the HDTVs.

US critics correctly say the Japanese have bought their way into some telecom markets by focusing first on telephone-answering machines, facsimile machines, small private-branch exchanges (PBXs), and small-scale office phone networks. However, this is proving to be a successful strategy.

Today, large electronics suppliers such as NEC or Fujitsu can offer nearly everything up to large PBXs for telephone companies. They also tend to control the component technologies.

Whatever software they cannot write themselves can be bought thanks to their controlling interest in small entrepreneurial companies in California or Massachusetts.

However, the Japanese are making substantial progress in software systems for PBXs, in part pushed by US competition. The extent to which Fujitsu, NEC and other PBX makers pose serious competitive threats in future will largely depend on their ability to continue upgrading the software side of their business.

While the Japanese producers have not yet been particularly successful in the American PBX market, partly because of the political nature of the large PBX market, they do possess the commitment to excel.

Neil Davis

Michael Skapinker tells how consumers are showered with electronic gadgetry to test what sells

Well ahead of the market

AT ITS research centre near Osaka, the Sharp Corporation has an exhibition of new products. Among them, is an electronic hairclip which you or your hairdresser can use to determine whether your hair is dry or greasy.

An electronics store in the Tokyo suburb of Shibuya offers a video tape rewinding machine in the shape of a small model car. When the rewinding is over, the car's headlights light up.

Not all of Japan's many consumer electronics offerings make their way to the west. The profusion of new products is evidence, however, of Japanese companies' practice of showering their home market with innovative gadgetry in an attempt to see what sells.

Consumer electronics executives in Japan now say, however, that their old methods do not work as well as they used to. One of the consequences of their success in electronics is that there are fewer western competitors able to do the basic research which Japanese companies can turn into fast-selling consumer products.

"Travelling around the west, we don't see any products which are not already in our hands," says Mr Hiroyuki Mizuno, executive vice-president of Matsushita, the world's largest consumer electronics company.

Over the past decade, it has not been difficult to work out what consumers wanted, Japanese executives say. It was often a matter of using existing, often western-inspired, technology to meet a perceived consumer need, as in Sony's use of the audio cassette to create the Walkman.

Now, Mr Mizuno says, Japanese companies are finding that their technology has run ahead of their markets. "In the last 10 years, we have been led by our markets. We are now suddenly in a new situation where our leadership is based on the development of our technology," he says.

Mr Ichiro Fujimoto, the head of corporate research and development at Sharp, adds: "In the past, we could see the needs of the market very quickly. Our technology was chasing those needs. From now on, what we need to do is to explore potential needs which are hidden under the surface. Our technology has gone beyond the level of what the consumer needs."

Mr Mizuno and other consumer electronics executives see the dangers of developing technology before they know whether customers want it. Mr Fujimoto says the problem is exacerbated by the fact that consumers cannot say what new products they want because they have no clear idea of what technologies are available. This is in contrast to professional users of electronic equipment who have a far clearer idea of their needs.

"The difficulty in the consumer market is that the products we launch have to be things that anyone can use without any difficulty," Mr Fujimoto says. "In products for professional markets, specialists who know the field are going to use them."

Mr Toshiyuki Yamada, senior general manager of Sony's research and development planning group, says that this is the reason his company has never relied too heavily on market research for consumer electronics. It is difficult for consumers to judge whether they would be able to make use of new products. "Our top managers are themselves consumers. They can smell what the consumer wants," he says.

Sharp, on the other hand, does not rely exclusively on its sense of smell. Mr Fujimoto says that the group has set up Creative Lifestyle Focus Centres in Tokyo, Osaka, New Jersey and Hamburg. The purpose of the centres is to study the lifestyles of local people with a view to predicting what their future consumer needs might be. These centres are aimed at meeting another difficulty that Japanese executives say they now face. This is that the international consumer electronics market is no longer uniform and undifferentiated. Increasingly, they say, consumers in different parts of the world react differently to product innovations.

For example, Mr Teruhiko Isobe, senior managing director of Pioneer, says his company developed a cartridge to enable several compact discs to be played one after the other without having to be loaded separately.

This was a natural follow-on from the old practice of stacking up several long-playing vinyl records which dropped, one after the other, on to the turntable. The compact disc cartridge was developed in the US, Mr Isobe says, where the idea was more attractive than in Japan.

Other consumer electronics executives say they need to go further than simply adapting products for use in different countries. If they are to succeed in the different regional markets, they say, more basic consumer research will have to be done outside Japan.

Matsushita's Mr Mizumo says his group has set up six laboratories in the United States, run by American managers. Sony has as its aim "global localisation", becoming an insider in the different markets in which it operates.

The first step in globalisation, Mr Yamada says, is establishing marketing operations abroad. The second is setting up foreign production facilities and the third is doing research and development outside Japan.

Sony, he says, has achieved the first two, but is still in the process of achieving the third. Asked to name a Sony consumer product developed outside Japan, Mr Yamada can produce only two.

One was the teletext system developed by Sony's subsidiary in South Wales. The second was "My First Sony", the Walkman for children, which was dreamed up by Sony employees in the US.

Battle at television's sharp end

MANAGERS in Japan and their western critics often talk of a lack of creativity in Japanese industry. The country's strength comes from mass production and marketing skills rather than from any sense of inventiveness, they say.

This self-criticism and outside carping cannot be directed at those Japanese researchers working in the field of high-definition television.

Japan began working on the development of sharper television images 20 years ago. Western companies only began a serious HDTV development programme in 1986.

The future of the proposed European high-definition system, HD-MAC, is in doubt. British Satellite Broadcasting, which planned to use D-MAC, an intermediate version of European high definition, has merged with Mr Rupert Murdoch's Sky Television and will now broadcast in PAL, the UK's existing standard.

By contrast, the Japanese have already begun satellite broadcasts of Muse, their own high-definition system. NHK, the Japanese broadcasting corporation, began one-hour high definition transmissions in June last year. By the beginning of 1992, NHK expects to start transmitting eight to 10 hours of high-definition programmes every day, says Mr Junji Matsuzaki, of NHK's HDTV special projects section.

Japanese companies understood far earlier than their western competitors that high definition images would have applications extending far beyond television broadcasting. Sharper pictures will be used in the medical, defence and other industrial sectors. HDTV sets will also use large quantities of memory chips.

Japanese companies believe HDTV will be the most important development in consumer electronics in the next decade. Mr Masahiro Hashimoto of Japan's Ministry of International Trade and Industry estimates that the high definition market will be worth $33.5bn to Japanese manufacturers by the turn of the century.

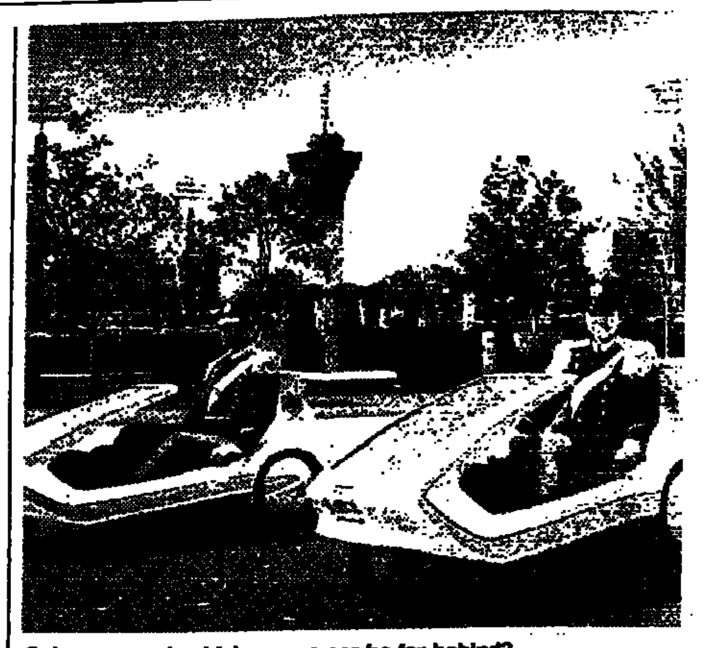
The Japanese HDTV standard is incompatible with the systems currently in use anywhere in the world, including Japan. This means that those wishing to watch high definition broadcasts will need to buy new sets, which, the Japanese manufacturers intend, will be supplied by them.

It was because the European manufacturers belatedly woke up to this danger that they began to develop their own alternative standard. They said their system had the advantage of being compatible with the existing European standards.

It will be difficult, however, for European companies to close the gap between themselves and their Japanese competitors. Sony has already said that it will sell its first HDTV set this month. The set, with a wide 36-inch screen, will retail at a staggering Y2.3m. However, Mr Matsuzaki believes that the price will fall sharply over the next few years. By the mid-1990s, he believes, an HDTV set will sell at no more than two or three times the price of a conventional television receiver.

Mr Hiroyuki Mizuno, executive vice-president of Matsushita, says he is confident young, affluent Japanese consumers will be prepared to pay for sharper, clearer pictures. "We've investigated what young people are buying," he says. "Young Japanese couples who live in one room can't afford a larger home. But they can afford to buy items like BMWs, Mercedes and Persian carpets." They will, he believes, add high definition sets to their list of fashionable purchases.

Michael Skapinker



Solar-powered vehicle: can a car be far behind?

SOLAR ENERGY

Finding a place in the sun

JAPAN'S solar energy research and development effort is finally finding its place in the sun.

It began 16 years ago together with a handful of other new energy source projects that were launched in the panic after the first oil crisis.

For most of the past 16 years, the main focus – and largest budget allocations – of the Ministry of International Trade and Industry's (MITI) so-called Sunshine Project has been on an ambitious, capital intensive effort to develop cost-effective coal liquefaction and gasification processes.

Now, with environmental issues – in particular, the depletion of the ozone layer and global warming – becoming major concerns, the production of energy from fossil fuels in any form is more and more frowned upon. The more environmentally benign processes, such as solar, geothermal and chemical power generation, are getting much more attention – and funding.

Last June, MITI announced that the Sunshine Project would be extended well beyond its initial completion date of 2000, and would put a new focus on solar energy technology. "It will tackle the newest of technological challenges; for example, as mid-term projects, super high efficiency solar cells, passive solar systems and systems for trans-border movement of clean energy; as long-term projects, magma energy and space power satellites," MITI said.

The goal, according to Mr Takashi Goto, director of the solar energy technology section in MITI's Agency of Industrial Science and Technology (AIST), is nothing less than to get the cost of generation of electricity from solar power down to the same level as that from fossil fuel power stations.

It would be wrong to give the impression that Japan has lagged behind other countries in solar energy R&D. On the contrary, it is a world leader in many aspects of the technology, and Japanese companies, notably Sanyo Electric and Kyocera, have had considerable success in commercialising it.

The main strands of solar energy R&D seek to find efficient ways of producing energy from the sun's light and heat respectively. Light can be used to operate photovoltaic cells, which are now commonplace in pocket calculators and other small electrical devices, whereas heat can be used to operate heat exchangers.

The potential for harnessing the sun's heat has rather severe limitations – imposed by the actual amount of heat that gets through to the earth and by the impracticality of transporting liquids over long distances. However, Japanese researchers have had considerable success in developing high efficiency solar collectors for use in houses or factories to supplement other sources of heat. According to MITI, more than 4m sets of hot water heat collectors have already been installed in Japanese homes.

The potential for photovoltaic cells is much more interesting, leading ultimately, in the view of Japanese researchers, to a time when there will be a worldwide electric power grid based on huge solar generation stations spread out across the earth's deserts delivering their power through superconductor transmission lines straddling the globe.

Mr Yukinori Kuwano, general manager of the R&D headquarters of Sanyo, is promoting the early establishment of an international project which he calls Genesis (Global Energy Network Equipped with Solar Cells and International Superconductor Grids). He believes it could be developed within the next 30 years.

MITI has set its budgets accordingly. Heat-related solar research gets about Y300m a year while solar cell R&D gets Y7bn. The main technical problem with photovoltaic cells is finding ways to improve their low conversion efficiency. In typical Japanese style, the Sunshine project has organised joint university-industry research teams to attack this problem from different directions, each competing against the other. Sanyo, for example, is leading the effort to develop cell production using amorphous silicon. Kyocera and Hitachi lead on polycrystal technology, Sharp on single crystal technology.

Amorphous silicon has the advantage of relatively low manufacturing costs, leading to an energy payback period of less than two years compared to two or three years for crystal cells. But crystal cells require much less space per unit of power produced and thus may be more practical for use in crowded countries Japan.

Japanese achievements in solar energy speak for themselves. Kyocera has the world record for conversion efficiency of a polycrystal cell – 15.9 per cent – and Sanyo leads on amorphous cells, having achieved a 10.2 per cent conversion efficiency. In terms of cell production, Japan and the US are about level-pegging, each making close to 15 megawatts a year, and together accounting for about two thirds of total world output.

More than 4m sets of hot water heat collectors have already been installed in Japanese homes

Mr Goto of MITI is optimistic that further significant progress on conversion efficiencies will be made in the next few years, and that the ministry's goal of doubling them by 2000 will be achieved. But he remains worried that production cost will not become competitive. "Unless we get to mass production, we will not get lower costs, and at the moment, there are no large-scale manufacturing plants being built," he says. It is, of course, a chicken-and-egg problem, as companies wait for evidence of substantial demand before building up production capacity.

So far, the uses of solar cells tend to be specialised, as in calculators, although in a number of Sunshine project experiments cells have proved competitive for ordinary power generation against diesel-powered generators on remote islands in Japan. Kyocera has developed a line of street lighting and marine channel markers that have had considerable commercial success.

Sanyo, which accounts for over a third of Japanese production, has been the most adventurous, developing a range of experimental products using its amorphous silicon cells. Among them are a home air-conditioning system that uses solar energy to supplement mains electricity, roofing tiles that incorporate solar panels and an electronic scarecrow that blinks and beeps at random intervals.

The company has also explored the potential offered by the thinness and flexibility of amorphous silicon panels, using them most recently on the experimental Sun Seeker solar-powered aeroplane that flew non-stop across the US in July. It has also contemplated using this sort of solar fabric for tents, boats, jackets and portable battery rechargers. Last summer it introduced a small golf cart-like vehicle at the Osaka International Garden and Greenery Exhibition for transporting people. Can the solar-powered car be far away?

Sanyo officials are not inclined to make specific forecasts, but they are confident that their step-by-step strategy will pay off at some point. If environmental concerns remain intense around the world, they are probably right.

Ian Rodger

JAPANESE INDUSTRY 9

BIOTECHNOLOGY

Ferment in the laboratories

THERE is a theory among Japanese biotechnology researchers that their field has attracted less controversy in Japan than in other developed countries thanks to the traditional taste for fermented products such as soy sauce and miso soup.

In spite of the perceived historical headstart, Japanese researchers are conscious that they still trail the US in biotechnology. Japanese suggest that they lag behind Europe in basic research, but are better at marketing successful research, and ahead in research areas such as semiconductors, the so-called biochips.

The ministries responsible for biotechnology, the trade, agriculture, education, and health and welfare ministries, fear a delayed public reaction against gene manipulation and, for example, the creation of new vegetable varieties could hinder their ambitions to speed biotechnology's development.

Japan has a strong "food purity" movement, but its attention has focused on use of chemicals during cultivation and not on the plant under cultivation.

Japan has a strong "food purity" movement, but its attention has focused on use of chemicals during cultivation and not on the plant under cultivation

Companies most active in research are the brewers, the cosmetic manufacturers, and the pharmaceutical makers, though the senior corporate members of the Japan Bioindustry Association total 194, and include auto makers and the leading banks, who have joined to gain an understanding of the research they fund.

The JBA, formed in 1942 as the Japanese Association of Industrial Fermentation, is intended to be a go-between for industry and academe, but the influence of the Ministry of International Trade and Industry (Miti) over the association and the direction of biotechnology is considerable. Miti provides the association with executives, funds projects and generally decides what research should be followed on an industry-wide basis.

Mr Hirofumi Ono, a senior officer of Miti's biochemical industry division, said that two projects highlighted by the ministry are research into biodegradable plastics, and marine biology. About 50 companies are sharing resources in the former project, and about 20 are involved in the latter, while numerous others are interested and informed onlookers.

There is nothing particularly sinister about the ministry's role in advancing biotechnology, as it generally communicates with the companies on a range of issues unrelated to research, and has enough influence to persuade them that it is in their best interests to participate in collective projects.

At the same time, the ministry itself is influenced by outside academics, some of them members of the JBA, as well as by the other ministries with a vested interest. Miti's past image problems with the orchestration of Japan's industrial development prompt officials to play down its role, and to emphasise the importance they place on international cooperation.

The government is determined that Japan be seen as an active member of international organisations, and willing to share the products of its research. The JBA is planning a "Bio Japan" conference and exhibition for August 1992, while university and corporate research laboratories are increasing their exchanges of personnel.

Several companies, including Hitachi Chemical and Shiseido, the cosmetics maker, are funding research projects outside Japan. Hitachi has invested $20m in a biotechnology lab at the University of California, while Shiseido has a broad-based $85m joint research agreement with the Harvard Medical School, including elements of biotechnology research.

Japanese investment in foreign companies is also on the rise. Japan Tobacco last year took a $6m, 8.7 per cent stake in Plant Genetic Systems of Belgium, while Yamanouchi Pharmaceuticals' $395m purchase of the US health products group Shaklee was partly motivated by the Japanese company's interest in biotechnology. In August, Sanyo Electric bought biotech-related machinery interests from Fisons, the UK pharmaceutical maker, for £10m.

Miti's contribution to biotechnology research was Y3.4bn this year and likely to be around Y3.6 in 1991, though the ministry prefers to emphasise the role played by private funding. Government funds are also directed through the Agriculture Ministry and the Science and Technology Agency, but the JBA estimates that 70 per cent of research costs are borne by private enterprise.

The ministries have generally left companies to determine whether their food product developments are suitable for public consumption. Kirin Brewery has plans to market a male asparagus derived from female genes, and a new variety of potato, which comes in different coloured jackets.

Mr Ono at Miti said the Agriculture Ministry must approve the marketing of such discoveries, but the responsibility for ensuring safety essentially lies with the company and that it is assumed that if doubts exist the company would not file for ministerial approval.

The broad interest among Japanese companies in biotechnology was shown at the first national exhibition of equipment for the industry in October. NEC Corp displayed computer-aided research equipment for protein engineering, and Hitachi Software Engineering showed a database system for bacteria identification.

Japan's public awareness of biotechnology is highest in its use in cosmetics research. Dr Tatsuya Ozawa, director of the Shiseido Research Centre, near Tokyo, said the company's first significant success in industrial production of a biotechnological product was bio-hyaluronic acid, a moisture retainer used in skin care products. In 1984, the company developed the acid through a fermentation process, replacing the traditional animal sources, and a year later began marketing skin care creams.

The government is determined that the country be seen as an active member of international organisations, and willing to share the products of its research.

The company is optimistic that successs in producing the vitamin biotin (vitamin H) through gene recombination, which raised output levels by 100 times, will eventually lead to the release of a range of new skin care and, perhaps, hair growth products. Dr Jiro Kishimoto, a Shiseido laboratories, said output needs to be improved another 10 times before commercial production is viable.

Dr Ozawa said the point of much of Shiseido's research is intended to find an answer to the enduring question of "how can we delay ageing?" The ageing process is a "healthy state", he says, but it can be slowed down by products developed through biotechnology research.

Robert Thomson

Ashley Ashwood

Assembly of aircraft skins at Mitsubishi: Japan makes about 40 per cent of components for Boeing 747 airframes

AEROSPACE AND DEFENCE

A long, slow take-off

IT IS tempting to dismiss Japanese aerospace as an industry with a great future behind it.

The Ministry of International Trade and Industry has long spoken of the sector as the next great technological summit to be scaled. And because of Japan's successes in other areas of manufacturing, many in the west were ready to believe the rhetoric.

Yet, except in satellites and launch vehicles, where Japan is committing substantial resources, the vision of a world-class national aerospace industry remains unrealised.

The dated and not very successful YS-11 small airliner is still Japan's only home-grown civilian project since the war, while the FSX fighter, made in low volumes under licence from the US, is the mainstay of military production.

"We do not have a very confident future," says Mr Eiichi Ono, president of the Society of Japanese Aerospace Companies. "Conventional wisdom has it that we are 15 to 20 years behind in engines. In airframes, we have no experience, so we can't even assess how far behind we are."

Mr Bruce Roscoe, an analyst with Goldman Sachs in Tokyo, agrees the immediate outlook seems bleak: "The industry's problem is that orders are so scarce that it may have nothing to do quite soon. Some people are saying Japan should forget about aircraft and concentrate entirely on space."

But has Japan abandoned its ambitions - or simply switched tactics? Miti has stopped setting challenging long-term objectives of self-sufficiency in the industry. Instead, it is emphasising step-by-step advances based on extensive international cooperation.

The new approach recognises explicitly that the costs of building an aerospace industry from scratch are prohibitive, and that even western manufacturers are being obliged to pool their efforts and seek government support to develop major new products.

Miti recently persuaded General Electric, Pratt & Whitney and Rolls-Royce to join Japanese companies in developing a working prototype of a powerful ram-jet engine for a future generation of supersonic airliners. The department also sponsors feasibility studies on supersonic airframes and on new materials for them.

Leading Japanese aerospace companies such as Mitsubishi and Kawasaki Heavy Industries (KHI) already have considerable experience of subcontracting for western aerospace companies. About 40 per cent of the components for Boeing 747 airframes are made in Japan, and Boeing's planned 777 is a collaborative venture with Japanese partners.

British Aerospace recently agreed to sub-contract part of its Airbus work to KHI, while Mitsubishi is in talks with Germany's Daimler-Benz on possible cooperation in aerospace. In addition leading western aero-engine makers have several co-production ventures with Japanese companies.

For western manufacturers, such deals involve fine calculations. The benefits of cooperation include risk-sharing, high-quality sub-contracting and better access to the Japanese market. The obvious danger lies in parting with sensitive know-how and technology which today's Japanese allies could use to become tomorrow's competitors.

Boeing says it is impressed by the efficiency of its Japanese sub-contractors and that their mastery of new materials is equal to – though not ahead of – the west. But it says they still lack the sophisticated systems integration expertise needed to manage big aircraft programmes, which Boeing regards as its core comparative advantage.

United Technologies, owner of Pratt and Whitney, is more guarded. "We have learned from observation that Japanese companies are further along with jet engine technology than we thought – and we're not entirely sure about their speed of acceleration," says Mr Stanley Krueger, president of United Technologies Japan.

The question which most puzzles foreign analysts, however, is whether Japan could yet become an international force in aerospace without having a fully-fledged aerospace industry in the western sense. Some of the most interesting developments are emanating not from companies in Japan's aerospace "club" – which suffer from the familiar shortcomings of suppliers who depend heavily on cost-plus government contracts – but from industry outsiders.

Car makers Toyota and Nissan are displaying increasing interest in the sector, while Kobe Steel and Nippon Steel are researching advanced metals and composites for aircraft and space. Japan is also a leading producer of carbon fibre, of growing importance in aerospace, though most of its output at present goes into sporting equipment.

The Japanese electronics industry's interest in aerospace remains lukewarm, but its genius for miniaturisation clearly has potential applications in avionics and "fly-by-wire" systems.

These examples all underline the growing overlap between aerospace and technologies in which Japanese industry is strong. That they remain largely unexploited seems due less to technical limitations than to lack of commercial incentives and marketing knowledge.

Meanwhile, military requirements are starting to give a bigger boost to technological development. Fujitsu says national defence authorities are pushing it to intensify research in areas such as infrared devices, special displays and superconductors which could have extensive commercial applications.

Hence, Japan's prospects in aerospace will be determined not by any grand national strategy but by parallel and often unconnected progress in many different areas, in cooperation with international partners.

Few western companies are prepared totally to discount the possibility that, longer-term, these disparate efforts could converge to create a fully-fledged aerospace sector. Says Mr Krueger of United Technologies: "If you find yourself able to make 95 per cent of a product, it must occur to you to go for the last five per cent."

Guy de Jonquières

CAR MAKERS

Faster gear change

JAPAN'S motor industry is changing gear again. Having set new standards of quality and production efficiency which have made it the world's largest car manufacturer, the industry is now positioning itself to pioneer new trends in customer demand.

Leading Japanese car makers all aim to expand the variety of their ranges by developing models more rapidly and producing them more flexibly and in lower volumes. One result is the recent launch of "niche" cars such as Mazda's MX-5, Honda's NSX and Toyota's Cera coupé.

Another objective for the 1990s is to make cars safer, greener and cleverer. That will involve giving them more crash-proof features, reducing their weight, building them out of environmentally more friendly materials, increasing engine efficiency and incorporating more electronic systems.

Some of these plans will depend on advances in technology in areas such as new materials. All the larger Japanese car companies are, for instance, working to develop ceramic gas-turbine power units, which would be much smaller and cleaner than internal combustion engines. For the foreseeable future, however, the Japanese industry's competitive edge is likely to continue to depend less on technical wizardry than on its impressive ability to organise people and motivate them to perform at peak efficiency.

Japanese car makers – and particularly Toyota – have replaced mass-production techniques with what a recent Massachusetts Institute of Technology study baptised "lean production". It owes its name to the fact it uses less of everything – people, time and materials.

The MIT study finds that, on average, Japanese companies take less than 17 hours to make a car, against more than 25 hours required by their US competitors and 36 hours by Europeans. The Japanese also develop new models in 46 months, while the Americans and Europeans need closer to 60 months.

How much further can Japanese companies press their productivity advantage? Honda, for instance, says it aims to reduce model development time to 24 months, while Toyota dreams of producing different models to order on the same line, to meet specific requirements of customers.

"Reducing development time is equivalent to competitiveness," says Mr Yoshiro Kimbara, a senior managing director of Toyota. As well as enabling companies to refresh established product ranges more frequently, it allows them to experiment with specialist models, which enhance their marketing image and may turn into big sellers.

The toughest challenge is to make such goals economic. "Speeding things up will require a big cost sacrifice," says Mr Shoichiro Irimajiri, an executive vice president of Honda. "Right now we have a good balance between speed and cost. But if we want to go faster, we will need more manpower in R&D and manufacturing."

There is widespread scepticism about how much can be achieved by automation. Though Toyota, for instance, has shortened development time by using computer-aided design systems, only eight per cent of functions on its final assembly line are automated. Robots are used extensively only in operations such as pressing and painting, which are dangerous or dirty.


Ashley Ashwood
Fast work: less than 17 hours to make a car

There are two reasons for Japanese caution about automation. First, in spite of high wages, companies say it is still much less cost-effective than using human beings. Secondly, it is much less adaptable.

"You have to understand that the human being is the most flexible robot," says Mr Irimajiri. "The more automation you add, the more rigid your production line becomes. Managing model changes was much easier 10 years ago because we had less automation then."

As a consequence, the industry's quest for still higher productivity is focused largely on using its existing labour force more efficiently. There is no single master plan. Rather the emphasis is on exploring thousands of small ways to tighten coordination, eliminate waste and improve quality throughout the system.

The common theme of efforts is to increase flexibility, to permit production of a greater variety of models in smaller volumes. Honda says its minimum breakeven point today is 100,000 units a year. But it hopes to gain valuable lessons manufacturing its NSX sports car, of which it is producing 6,000 annually

Toyota aims to increase from a maximum of three the number of different models it can make on the same assembly line. It says its biggest challenges are to maintain quality and to ensure that its suppliers can continue to deliver the much larger number of components required exactly when they are needed.

A further level of complexity is added by the companies' growing international production networks. Though quality levels at many overseas plants are said to be approaching levels at home, their efficiency still lags behind Japanese standards.

Product development is also likely to require much more careful coordination. Most leading Japanese companies are seeking increasingly to tailor models to particular regional markets, and Honda aims eventually to set up fully-fledged development centres in the US and Europe.

Nonetheless, manufacturing thousands of miles away has also yielded valuable lessons. For instance, the experience gained in adapting its famous "just-in-time" system for use at its US factory has encouraged Toyota to open its first Japanese plants outside its home town of Nagoya.

However great the practical obstacles, Japanese companies clearly believe they are compelled to continue trying to make cars faster, more efficiently and in greater variety. As Mr Irimajiri of Honda puts it: "Our customers will demand it of us."

Guy de Jonquières

ADVANCED MATERIALS

Strong, light and expensive

THE VIEW that Japanese research and development is imitative and narrowly tied to commercial opportunities seems years out of date on even a cursory inspection of the research being carried out by high-tech companies and backed by the government.

A prime example is the effort being put into developing advanced materials, which can endure an environment as hostile as space. This year, the budget for government-backed new materials projects has increased to Y20.2bn from last year's Y16.1bn.

On the corporate side, surveys by the Ministry for International Trade and Industry (Miti) show that between 1985 and 1988 the number of companies involved in new materials more than trebled to 302, working on 1,822 items. Miti estimates the world market for these materials will also treble to at least Y9,500bn by 2000.

According to Mr Yasuaki Mori, director of Miti's Basic New Materials Policy Office, a new era for advanced materials dawned in Japan in 1984. He contrasted the fundamental nature of the science with earlier R&D, regarded as primarily commercial.

The projects being supported have eight to 10-year ranges and are regarded as too expensive and too risky to be undertaken by one company. Space projects and energy saving are frequently cited as the driving forces.

Mr Mori said the goalposts had to be moved regularly over what qualified as a "new" material. This is noticeable in the near halving of support this year for high performance plastics and polymers, whereas the amount for high-performance ceramics has more than trebled.

Within the ceramics R&D, he said the emphasis was on improving the properties so that the material became easier to cut and shape and was less fragile, particularly in large structures.

At Kawasaki Heavy Industries, a common thread in the work on ceramics and composites is the search for ones which can endure the temperatures found on the re-entry of a spacecraft into the earth's atmosphere, or in a gas turbine designed for maximum combustion efficiency.

The highest temperature target is around 2,000 deg C. One project, being worked on with Nippon Oil Co and supported by Miti, involves producing carbon-carbon composites via the pulse chemical vapour infiltration process. Mr Koichi Hiraoka, senior manager of KHI's aircraft research laboratory, said this minimised degradation of the material and dovetailed with work to make the surface resistant to oxydisation.

For temperatures around 1,700 deg C, a resin char method could be used to produce a composite suitable for the nosecone of HOPE, the proposed unmanned, reusable spacecraft.

THE MARKET FOR NEW MATERIALS IN 2000 (Ybn)

	1987	2000
Polymeric materials[1]	845	2,170
Metallic materials[2]	645	2,180
Inorganic materials[3]	1,084	3,480-6530
Composite materials[4]	535	1,680
Total	3,109	9,500-12,600

1 Engineering plastics, insulating resins, polymer alloys, photosensitive resins, etc. 2 Semi-conductor materials, powder metal materials, amorphous alloys, magnetic materials, etc; 3 Optical fibres, magnetic materials, capacitor elements, etc; 4 Glass fibre reinforced plastic, carbon fibre, etc.
Sources: New material industry: a policy for the future. MITI basic new material study committee (1989)

Other materials being nurtured by KHI's engineers – who stress the continual dialogue between factory and laboratory – include ones that tackle the problem of brittleness in ceramics and in inter-metallic compounds. One involves the development of a "functionally gradient material", which changes from 100 per cent metal to 100 per cent ceramic.

But the risk in developing these complex materials for the "ultra environment" is that more down-to-earth industrial applications can prove elusive. Mr Hiraoka spoke of long-fibre-reinforced metal tubes, where the first eight-year stage of a government-backed project was complete.

The cost of manufacture – particularly volume manufacture – is another crucial factor. Although carbon fibre-res in composites are found in sports gear and airframes, the total volume in existence is no more than 10,000 tonnes, according to Mr Kiichi Fujisawa, general manager of the advanced composites department at Toray Industries, the textile group.

He said that for aircraft, where production numbers are small, it was feasible to spend five hours making a part. "For cars produced in their hundreds of thousands a year, the requirement is quite different."

Yet carbon fibre composites are beginning to appear in cars, for instance in prop shafts where the advantages over metal of lighter weight, less vibration and non-corrosion outweigh the disadvantage of price.

To make a shaft, the fibre is dipped in a resin bath and then wound on to a metallic core which is removed after curing. Two of the production challenges are to speed up the running of the fibre and to develop a faster-curing resin.

Mr Fujisawa explained that Toray's textile expertise helped in the handling of the fibre. Many of the forms in which the material is produced reflect textile roots. Toray produces both the "yarn" for others to "weave" or "knit", and rolls of fabric, "mats" and "braids".

Once the material can be produced in large volumes at reasonable cost, it will open the way for new applications, such as curtain walling in buildings. Mr Fujisawa said this could save up to 3,000 tonnes in the weight of one building and shorten the construction period. Miti believes if construction materials were easier to handle, it would reduce the industry's acute difficulty in attracting workers.

One company that has renewed its stress on production technology is Kyocera, the ceramics, electronics and telecoms group. In its bid to supply ceramic rotors for car engines it spent nearly two years making a prototype production line.

Kyocera is a leading producer of ceramic packages for microchips and its research in this field is dominated by the rapidly changing requirements of the chip makers, including Hitachi, NEC and Fujitsu. It tends to co-operate with them rather than looking to government-backed projects.

Mr Kenjiro Kimura, managing director of the technology and planning division, gave as an example the manufacturers' effort to employ gallium arsenide in chips, so that light signals could be used. To improve the associated packages, one option being examined was to incorporate glass.

Jane Fuller

FACTORY AUTOMATION

Robots come to the rescue of employers

JAPANESE manufacturers have long been the most enthusiastic explorers of the possibilities of factory automation, and there is no sign yet that their enthusiasm is abating or that they believe the possibilities for further automating their activities are declining.

Japanese manufacturers were well ahead of their western competitors in the 1970s in adopting computer numerical-controlled (CNC) machine tool technology.

They have also been far ahead of everyone else in installing industrial robots and they are now pushing out the frontiers of computer-integrated manufacturing (CIM).

The reasons for this adventurous attitude are now fairly well understood. Manufacturing industry in Japan has been plagued by labour shortages since the 1960s.

Then, from the time of the first oil shock in 1973, manufacturers were under tremendous pressure to find ways to maintain their international competitiveness. The then new, highly flexible CNC machine tools – and, later, flexible manufacturing systems – offered ways to improve productivity and product quality at the same time.

Production engineers are conservative by nature. Aware of the huge costs of interruptions of production, they are cautious about replacing tried and proven systems and machines with new ones. Japanese engineers, however, have felt they had no choice but to explore new methods, and so, not surprisingly, they became the first to master them.

On the other hand, Japanese managers have had the advantage of not having to face militant trade unions worried that robots were going to take away their members' jobs. Unions tend to be organised at company level in Japan and, in any event, have not had to worry much about job security.

The result is Japan not only leads in most aspects of factory automation (the use of computer-aided design and engineering is a notable exception); it also has a very powerful factory automation industry.

The core machine tool and robot sectors are particularly strong. Annual machine tool output is expected to reach Y1,300bn this year, robot production about Y500bn. Yamazaki Mazak and Okuma Machinery Works are among the world's largest machine tool makers while Fanuc, Kawasaki Heavy Industries and Yaskawa rank among the top robot makers.

Today, the prospects for factory automation equipment suppliers remain very bright in Japan. Not only has the country's labour shortage worsened, but affluence has increased dramatically and so workers are less and less inclined to take the sometimes dirty, noisy and dangerous jobs associated with manufacturing. Automation helps make many workplaces safer and enables companies to get the job done with fewer workers.

Capital spending in manufacturing industry in Japan has been booming for the past four years, and a rising portion of it has been directed at labour saving projects. According to a Bank of Japan survey in August, spending for labour saving equipment, replacement and improvement of working conditions accounted for 41 per cent of manufacturers' capital budgets this year.

Until now, automation has made the most headway in discrete part production and in materials handling functions, with less progress in the more complex assembly functions. Today, the automation of assembly is the focus of considerable effort, mainly because it is such a labour intensive area, especially in the car industry.

One of the most advanced assembly lines is at Nissan Motor's Zama plant near Tokyo. Robots install tyres, dashboards, seats, windscreens, batteries and pour in petrol and radiator fluid. However, most of this automation is still manually programmed. In other words, the order in which components arrive at the assembly line is organised to coincide with the order in which different models appear.

According to Mr Naohide Kumagai, assistant general manager in the robot division of Kawasaki Heavy Industries (KHI), robots will soon be equipped with sensors that will detect the shape of the oncoming chassis, thus enabling the computer driven robot to decide which component to pick up and exactly where to put it. One of the biggest challenges, Mr Kumagai says, is programming a robot to install car doors perfectly.

Managers have not faced trade unions worried that robots would take away jobs

Progress on automating assembly has been most rapid in precision industries, especially semiconductor manufacture, where the total absence of humans from the shop floor is a boon to quality control. Most of the big semiconductor makers, such as Toshiba, Hitachi and Matsushita, have their own precision automation divisions, and Matsushita ranks as the largest robot maker in Japan by some criteria.

No sector as important as automation could be free of political problems, and the issue of standardising software for factory systems has been growing for several years. In the latest skirmish, the US and EC governments appear to be trying to tone down a proposal by Japan's Ministry of International Trade and Industry (Miti) for a 10 year $1bn international project to develop intelligent manufacturing systems. (IMS).

The idea behind the project, which was to be open to participants from all over the world, was to develop common standards for automation equipment and systems. US and EC representatives feared it would lead a one way transfer to Japan of sophisticated software and sensing know-how. At meetings last month in Tokyo, they baulked at approving the project but agreed to carry out a feasibility study for it next year.

Even if the IMS project does not go ahead, Japanese automation companies can be counted on to step up their efforts to to develop products. Most forecasts suggest that markets will continue to grow rapidly. One indication: the Japan Industrial Robot Association believes that the number of industrial robots in operation in Japan will soar from 175,000 in 1988 to 460,000 in 1995.

Ian Rodger